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DETROIT

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · MACHINERY · PARTS · ACCESSORIES · TOOLS

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First Copy

New Plymouth Six De Luxe Models Go on Public Sale Throughout Country Today

Sales Manager Harry J. Moock Reports Orders on Hand Already Total $6,000,000; Aggressive Campaign Planned

Detroit, April 14.—Tomorrow, Saturday, April 15, the six new de luxe Plymouth models make their official bow in salesrooms all over the country. Harry Moock, general sales manager of the company, informed a representative of Automotive Daily News that more than $6,000,000 worth of these cars have been delivered to Chrysler, Dodge and De Soto dealers before the public unveiling takes place.

Automotive Daily News carried a description of these new Plymouth de luxe models more than a week ago. The chassis has a 112-inch wheelbase and there are many interior and style improvements to attract buyers. Prices range from $495 for the two-passenger coupe to $595 for the convertibe.

Sales Manager Moock announces that the new Plymouths are to be backed by an aggressive sales campaign. Factory-dealer meetings are now being held all over the country to acquaint Plymouth dealers with the corporation's plans for the coming year, which are said to embody a great deal of good news for the retail organization.

In connection with the announcement of the new models, Harry Moock expressed the belief that the legal return of brewing would create a sizeable market for Plymouths.

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FORD DISMANTLING CLEVELAND PLANT

Cleveland, April 14.—Abandonment of the Ford Motor Company's assembly plant in Cleveland was indicated today with the dismantling of the plant and the shipment of tools and other equipment to Ford production units in other cities.

R. A. Hayes, assistant manager, says the changes made here are part of a nationwide adjustment being made by the Ford company, due to present business conditions.

The Cleveland assembly plant recently has employed several hundred men and at times has had as many as 1,400 on the pay roll.

All cars for Cleveland distribution are being shipped from Detroit by

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CAR FINANCING OFF IN FEBRUARY

Washington, April 14.—Automobile financing for February declined slightly on both wholesale and retail ends, according to the survey just issued by the Bureau of the Census.

Wholesale financing in February amounted to $27,476,782, as against $30,126,590 in January and $33,276,393 in February, 1932. However, with the exception of January, this figure is the highest attained since last June.

Retail financing amounted to $29,072,065, in comparison to $31,150,193 for January and $44,829,138 for February, 1932. Of the February total, 37.49 per cent. were new cars, 60.41 per cent. were used cars and 2.10 per cent. were unclassified.

The February totals represented 86,804 cars, of which 32,547 were new cars, financed for an aggre-

(Continued on Page 2)

HUPP RETAIL SALES FOR WEEK OF APRIL 8 BEST SINCE JULY, '32

Detroit, April 14.—Hupp sales are increasing rapidly according to Rufus S. Cole, vice-president in charge of sales. Mr. Cole reports that the week ending April 1, showed the largest number of cars delivered to buyers since July 1, 1932.

R. S. Cole

"The week ending April 1, was a good normal week for the present condition of business," stated Mr. Cole, "but the week ending April 8 showed an increase of 80 per cent. over the preceding seven-day period. Furthermore orders arriving now indicate that the improvement will continue as the number received on Monday, April 10, was larger than for any other day during the year 1933.

"The signs of returning business are to be found in many directions," reports Mr. Cole. "Some of the key logs have been removed from this business jam and things are beginning to move. The increased confidence in the administration, the activities of the brewing industry, purchases by retail establishments of new stocks and a general firmness in the price of commodities are all

(Continued on Page 4)

Detroit Plants Speed Production; April Output May Exceed 1932

New Schedules Are Prompted by Increased Orders; Ford Working Six Days, Chevrolet Five; Other Plants Speed Up Accordingly

Detroit, April 14.—This automotive city within the past week has found itself riding a wave of optimism such as has not been noted in many, many weary months. The expected sales bulge, which was hoped for about the middle of the month, arrived ahead of schedule, and all plants here have reacted to definite demand.

Few of the sales executives have announced definite figures, but the working schedules at the plants tell the story as plainly as official announcements could do. Every plant here is working directly on demand and if orders had not been received activity in the plants would not have increased as it has done during this present week.

This upward swing in manufacturing has been general. The Chevrolet plant is now working on a full five-day basis. Ford's Rouge plant is actually working six days a week. Last Saturday the engine assembly line operated, the first time in more than a year that this department has been in operation on Saturday. Plymouth is running full speed ahead on its new de luxe models, announced elsewhere in this issue. All the other vehicle plants have speeded up operations.

H. J. Klingler of Chevrolet some days ago told Automotive Daily News that his company had enjoyed a sharp increase in sales during late March, but apparently that was just a beginning. Reports here, borne out by plant activity, indicate that Chevrolet's production for April will reach 55,000, with an ex-

(Continued on Page 4)

BUSINESS SET TO "GO," HUDSON EXECUTIVES REPORT AFTER TRIPS

Detroit, April 14.—Optimism on the part of dealers as well as of prospective buyers—bright prospects for spring business—and, most convincing of all signs, a marked pick-up in retail deliveries right now—are keynotes in field observations made by Chester G. Abbott, general sales manager, and W. R. Tracy, sales manager of Hudson Motor Car Company.

During his visits to Hudson-Essex dealer points in eastern Pennsyl-

C. G. Abbott

W. R. Tracy

vania, New York, New Jersey, Connecticut, Rhode Island, Maine and New Hampshire, Mr. Abbott made a point of investigating with particu-

(Continued on Page 8)

LOWER FARM FREIGHT RATES INDICATED

Washington, April 14.—Sharp reduction in present high freight rates on all farm commodities and all other basic commodities is hoped for as a result of a rail freight rate investigation ordered by the Interstate Commerce Commission, according to Edward A. O'Neal, president of the American Farm Bureau Federation, who outlined the progress made in the "new deal" for agriculture in a radio address over

(Continued on Page 8)

REEVES SAYS STATES BETTER UNDERSTAND CAR OWNER'S RIGHTS

New York, April 14.—Measures designed to harass motor vehicle owners or to obstruct development of highway travel met with little success in most of the eighteen state legislatures which have adjourned, reports Alfred Reeves, vice-president of the National Automobile Chamber of Commerce.

Alfred Reeves

While more than 5,000 measures affecting the ownership or operation of motor vehicles have been introduced in the forty-four state legislatures, examination of the records of those which have adjourned shows that only a small percentage of these have been enacted.

The disposition of highway measures by the New York state Legislature was particularly gratifying to motor vehicle owners. Although intensive efforts were made by railroad groups to secure the enactment of a number of measures

(Continued on Page 9)

DODGE SALES GAIN IN WEEK OF APRIL 8

Detroit, April 14.—Dodge dealers' sales took another upward turn during the week ending April 8. That week's business tabulation, just given out by the office of A. vanDerZee, general sales manager of Dodge Brothers Corporation, shows retail deliveries of Dodge passenger cars 8.3 per cent. higher than during the preceding week. Deliveries of Plymouth cars by Dodge dealers during the same six-day period increased 4.4 per cent. over sales of the previous week. Dodge dealers' over-all deliveries of Dodge and Plymouth passenger cars and Dodge commercial cars and trucks, amounted to a total of 5.5 per cent. higher than the delivery volume recorded for the week of April 1.

A. vanDerZee

"While the increase ratio for the past week does not equal the marked rises of the two preceding weeks, during which deliveries mounted 23.6 per cent. and 34.4 per cent.," Mr. vanDerZee explains, "it is

(Continued on Page 10)

MARCH TRUCK SALES OFF IN 17 STATES

Detroit, April 14.—R. L. Polk & Co. today released commercial car sales figures for March in sixteen states and the District of Columbia. The total sales for this territory this March was 2,292 units, which compares with 3,890 vehicles in March, 1932.

The decrease this March works out at somewhat over 41 per cent. If this ratio continues in the other thirty-two states still to report, we shall have a total commercial car sale in March this year of approximately 10,000 vehicle units for the country.

It is interesting to note that in the general drop, one state managed to beat its sales record of a year ago. South Carolina, which also had more passenger car sales, had a total

(Continued on Page 9)

AUTOMOBILE RADIO ENGINEERS MEET

Detroit, Mich., April 14.—Members of the recently formed Automobile Radio Engineers Association, the first of its kind in the country, held their first regular meeting last night and elected officers for the coming year. They are as follows: L. Armstrong, president; Arthur Hibbs, first vice-president; Carl Morehouse, second vice-president; C. H. Nutting, secretary, and J. Watchins, treasurer.

Directors will be chosen at the

(Continued on Page 7)

BREWERS URGED TO AVOID MISFIT TRUCK EQUIPMENT

By WILLIAM C. CALLAHAN

New York, April 14.—Now that the brewing industry is rapidly getting back on its feet, it faces the equally big task of getting back on wheels. This latter phase will entail the purchase of several thousands of trucks and in the neighborhood of 5,000 passenger cars.

One of the greatest handicaps which faced the brewers when beer became a legal beverage on April 7 was the lack of adequate transportation to meet the rush of deliveries which could not be released before midnight April 6. To meet this situation the brewers were forced to call upon all types of truckers using all types of trucks, few of which were specially designed or particularly adapted for handling beer. The result was that delivery delays were further aggravated through the use of misfit equipment. The brewers no doubt have learned from this experience that a misfit truck, regardless of whether or not it is new, is inefficient and therefore more expensive.

Naturally the transportation needs of the brewing industry are not very sharply outlined today in respect to the number of individual types of trucks required. It is plain, however, that the brewer's delivery problems can be divided into three separate fields; city delivery, suburban delivery and inter-city and interstate delivery. In each category trucks will be needed suitable

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NEW PLYMOUTH SIX MAKES DEBUT TODAY

(Continued from Page 1)

Moock said: "We know from reports we have already received from our nationwide Plymouth dealer organization that the brewing industry is going to be a good customer for our cars. We have always enjoyed a good sale with companies employing large forces of traveling salesmen. But now with such tremendous activity in the brewery business, with hundreds of salesmen employed to contact retail beer outlets, our dealers report that they are taking a large number of orders from breweries and brewery salesmen.

"Plymouth is one of the world's most economical motor cars, giving excellent fuel mileage. It has ample speed and power. It carries a predominance of safety features. All these factors make it an ideal salesman's car."

● *SUCCESSFUL BREWERS*

—who made profits before and will again—won't overlook the value of past experience in planning for the future. Lessons in truck value, learned during pre-Volstead days, will be their guide in the selection of the one truck pre-eminently qualified to dependably and economically haul their products.

Where experience enlightens buying, the brewer's choice is bound to be Mack.

MACK TRUCKS, INC.
25 BROADWAY, NEW YORK, N. Y.

PEW SEES THREAT IN PENNSYLVANIA TRUCK LEGISLATION

Philadelphia, April 14.—J. Howard Pew, president of the Sun Oil Company, told a mass-meeting of 2,000 shippers, manufacturers, merchants and truck owners at the Elks Hotel, on the night of April 12, that the passage of legislation at Harrisburg, backed by a powerful lobby of railroad representatives,, would mean driving the independent commercial carriers from the state's highways, destruction of numerous business interests and prevention of any railroad rate reductions. The meeting was held under the sponsorship of the Pennsylvania Motor Truck Association, Inc., and the Pennsylvania Highway Users Conference.

Mr. Pew, Lowell Thomas, nationally famous traveler, journalist and broadcaster, and Councilman Edward A. Kelly, who last year fought the railroads' bills to regulate trucks off the road, were the chief speakers.

Establishment of "a single railroad-controlled monopoly" to "maintain freight rates at their present extortionate level and support present excessive capital structures" was depicted by Mr. Pew as "the deliberate purpose of a central supreme directing authority" not yet disclosed, but bound to be revealed. The railroads' demand for fixing, through the Public Service Commission, minimum rates for truck service, he declared, could only be construed as the desire to have such rates so high as to give the railroads a good chance at the business. He cited the constant misrepresentations of the railroads in their wholesale propaganda against the truck, asserting these to be "calculated factual inadvertences," and pointed out that the attack was countrywide.

It's smarter to be Car Thrifty

THE AMERICAN *Austin*

America's Most Economical Passenger and Commercial Cars

$275 up F. O. B. Factory

Write for details about non-conflicting and valuable franchise
American Austin Car Co., Inc., Butler, Pa.

FINANCIAL NEWS

BENDIX

South Bend, Ind., April .14. — Stockholders of the Bendix Corporation yesterday reduced the number of directors from sixteen to eleven and also made several changes on the board. V. W. Kliesrath, president of Bragg-Kliesrath Corporation, a subsidiary, was elected to the board.

Those dropped included C. S. Bragg, Charles H. Colvin, J. C. Ferguson, Graham B. Grosvenor, M. W. McConkey and James C. Wilson.

The new board consists of Vincent Bendix, Albert Bradley, Walter J. Buettner, Paul H. Davis, Richard F. Hoyt, A. L. Humphrey, V. W. Kliesrath, Charles Marcus, W. L. McGrath, C. O. Miniger and C. E. Wilson.

FEDERAL TRUCK

Detroit, April 14.—Federal Motor Truck and subsidiaries report for 1932 deficit of $631,249, compared with $632,455 for the preceding year, after depreciation interest and estimated Federal tax.

LIBBEY-OWENS-FORD

Toledo, April 14.—Libbey-Owens-Ford Glass shows net profit of $623,-103 for the first quarter of 1933 compared with net profit of $44,230 for the same period last year.

ELECTRIC OUTPUT

New York, April 14.—Electric production for the week ended April 8 was 1,399,367,000 kilowatt hours, the Edison Electric Institute reported yesterday. This was 4.5 per cent. below the like week in 1932, the most favorable comparison with the preceding year for any week since February 18. Total output compares with production of 1,402,142,-000 kilowatt hours in the week ended April 1, which was 5.3 per cent. below the corresponding week last year.

FORD OF CANADA

Montreal, April 14.—Ford Motor Company of Canada, Ltd., reports for year ended December 31, 1932, net loss of $5,206,737 after depreciation, taxes, etc., comparing with net loss of $1,384,757 in 1931.

In the year 1932 there was transferred from surplus account $1,000,-000 to reserve for investment in affiliated companies and for contingencies, against a similar transfer of $1,250,000 in 1931. Total sales and other income for year 1932 amounted to $17,168,770 against $21,596,851 in 1931.

TIRE SHIPMENTS OFF IN FEBRUARY

New York, April 14.—Shipments of pneumatic casings for the month of February amounted to 2,292,463 casings, a decrease of 11.7 per cent. under January, and 10.2 per cent. below February, 1932, according to statistics released by the Rubber Manufacturers Association, Inc., today.

This organization reports production of pneumatic casings for February to be 2,339,373 casings, an increase of 3.6 per cent. over January, but 39.6 per cent. under February, 1932.

Pneumatic casings in the hands of manufacturers February 28 amounted to 7,376,946 units, an increase of 1.9 per cent. over January 31 stocks, but were 19.6 per cent. under February 29, 1932.

The actual figures are as follows:

Pneumatic Casings

	Shipments	Production	Inventory
Feb., 1933.	2,292,463	2,339,373	7,376,946
Jan., 1932.	2,596,585	2,257,846	7,236,845
Feb., 1932.	2,552,861	3,871,220	9,172,245

CAR FINANCING OFF IN FEBRUARY

(Continued from Page 1)

gate of $16,830,926, at an average cost of $517 per car, while the used car total was 52,434, financed for $11,711,166, at an average cost of $223. The unclassified total was 1,823, financed for a cost of $529,973, at an average cost of $291.

SPARKS from DETROIT

Speed Planes

* * *

Reviving the Vanderbilt

* * *

Frank Illsley

* * *

Stopping Slumber

* * *

Chris Sinsabaugh
Detroit Editor

IT wasn't so much that Agello, member of the Italian Schneider Cup team in 1929, set up a new world's seaplane record of 426.5 m. p. h. in a flight over Lake Garda in Italy as that he proved the worth of an engineering idea that, while comparatively old in theory, yet is new in practice.

That idea is the twin engine in tandem and with two propellers turning in opposite directions on a sleeved shaft in front.

As the inquiring reporter, I find out from our local aviation oracle, William B. Stout (that name certainly carries weight in a discussion like this), that Fred Verbille, now a consulting engineer in Detroit, worked on the tandem-engine type double propeller principle five years ago when he was in the Army Air Corps.

* * *

VERBILLE'S THEORY didn't click because we Americans haven't been so much interested in the racing type of airplane engines as we have been in developing engines for commercial and military purposes. Of course, speed is important with us, but not for racing. We can't see any wisdom in spending our money on something that can't be put to practical use.

* * *

"AS PROOF OF THE PUDDING, so far as the United States is concerned, recent developments lead me to predict that very shortly the flying time between New York and Chicago will be cut from six hours to four and a half." Stout told me. "We're using speed for practical purposes.

"Agello's plane, I believe, had Fiat engines, and has a landing speed of 120 m. p. h. Ordinary landing speed is around sixty.

"The reason for tandem engines and double propellers is that in a racing plane it is necessary to get the maximum amount of power into the smallest space, so that it has a minimum drag. The two propellers turn in opposite directions to prevent the torque from upsetting the plane. With a single propeller, the engine and propeller would be gee-hawing against each other. The two propellers neutralize the torque."

* * *

THERE'S JUST AS MUCH CHANCE of getting Gene Tunney and Jack Dempsey into the same ring again as there is in reviving the Vanderbilt Cup automobile road race on Long Island, as proposed by James L. Dowsey, who has asked the board of supervisors in Mineola to grant permission to revive the classic. Dowsey would stage it for the benefit of the unemployed.

The last Vanderbilt on Long Island was run in 1910. It was not a money-making affair, the principal support coming from automobile manufacturers, who no longer support racing. The Long Island course does not lend itself to the collection of admission fees, as does the circuit at Elgin, Ill., where the farmers owning the surrounding land used to go fifty-fifty with the race promoters and split the gate receipts. Without any profit to hand over to the unemployed, the whole scheme strikes me as decidedly impractical, especially as the present-day racing driver has to finance himself and cannot afford to drive for nothing.

* * *

OLD-TIMERS, did you know that the Illsley who is at the head of the Detroit company which is putting out the coolant control device described in a recent issue of A. D. N. is the same Frank P. Illsley who was one of Chicago's earliest automobile dealers?

I hadn't heard the name in a quarter century until this device was announced. Then I unearthed an old friend. As an automobile dealer, Illsley dates back to 1901, when he had the Autocar passenger car agency in Chicago. Geyler & Levy took it over in 1904, while Illsley continued with the Stevens-Duryea and the foreign Mercedes.

In 1907 he retired as a dealer, but did not give up his connection with the industry. He's been a consultant engineer ever since. He spent several years working on a kerosene carburetor which was very much in the public eye along about 1909 and '10, and his latest is the coolant control device, designed to prevent the loss of cooling water or anti-freeze solutions.

* * *

I'VE HEARD ABOUT being "asleep at the switch," but now it seems a preventive has been invented. My Canadian scout, Tom Corpe of Oshawa, in this big city for the day, tells me of a British woman driver who has equipped her car with a special switch on the steering wheel which sets off a loud buzzer if hand pressure is relaxed to arouse her in case she goes to sleep while driving.

Retail Salesmen — This Is Your Page

This department is devoted to the interests of the retail sales division of the industry. Salesmen, this is your department. Automotive Daily News wants you to get something from this department that will help you in your work on the firing line. It wants you to pass on your own experiences, success, failures to help your brother salesmen. Send in your story in the form of a letter, or even a postal card, and let us get it ready for publication. Your achievement or your mistake may help another salesman to make sales or avoid errors that cost you commissions.

Dealers read this page. Give us the benefit of your reactions on these problems that affect the work of your salesmen, the men on the firing line, the men who bring home the bacon or don't.

BIG BANK HOLIDAY BUSINESS RESULT OF FOLLOW-UPS

By H. C. BRUNNER

That business is available for those who go after it, even during a bank holiday, is amply demonstrated in the case of the Garfield Motors, Inc., Milwaukee Pontiac dealer, which registered seven new car orders and twelve used car deliveries in four days, during the latter half of March. The company's sales since the first of the year have tripled over the same period last year.

Maintaining the moral of the sales staff is an important factor in the success of this concern, which has been in business for the past five years. The recent splendid sales record has been largely accomplished through a reorganized sales force under the direction of R. B. Lorch and Monroe Hermes.

According to Mr. Lorch, the primary reason for the success of the concern is that they have kept constantly on their toes and continued to follow up prospects, even during the bank moratorium, while other dealers coasted during this period. The agency holds sales meetings every morning, at which time the preceding day's business is reviewed and the business for the day outlined. In addition pep meetings for the entire organization, consisting of fourteen people, are held every second and fourth Thursday during the month at 8.30 p. m. These meetings differ from the morning sales conferences in that they are of a purely inspirational nature, with outside speakers called in to make addresses. Also when customers are in the showrooms at the time, they are invited to attend these gatherings.

The company maintains a follow-up system on call-backs for its salesmen, and each salesman is obliged to fill out a printed card outlining what he did the day previous in the way of making or contacting used car and new car prospects. Prizes in the form of bonuses are presented to the outstanding salesmen at the end of each month. Prospects for the most part during the past several months have been gleaned from those people known to have jobs. Government and city employees, professional men and the like have been considered as particularly acceptable prospects.

Other prospects for new cars are obtained through the company's owner follow-up system. After a person has brought his car to the Garfield Motors for servicing, regardless of whether it is a used or new car, a record of this job is kept, with the person's name, telephone number and date of call. This card is indexed for attention at the end of thirty days, after which, if the owner has not called for additional service, he is contacted on the tele-

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NEBRASKA LIVESTOCK AUTHORITY NEW FRUEHAUF TRAILER DISTRIBUTOR

Detroit, Mich., April 14.—The appointment of Fred F. DeVore as exclusive Fruehauf trailer distributor in the Nebraska territory brings one of the country's foremost livestock authorities into the field of motorized transportation.

Seventeen years ago Mr. DeVore was instrumental in organizing the National Swine Growers' Association. Later he originated and is still the publisher of the Durco Sentinel, Des Moines, official organ of the Durco Breeders' Association.

The new organization will be known as the DeVore Trailer Sales, with headquarters at 2523 Leavenworth St., Omaha. At the same time he is prepared to give expert assistance along transportation lines through his manager, Otto T. Lindstrom.

G. M. Building at Century of Progress Is Completed

Detroit, April 14.—Installation of machinery for the Chevrolet assembly plant, placing of some of the art objects and the interior Building at the Century of Progress Exposition at Chicago has been started. Construction work has just been completed. Landscaping, including a sunken garden between Lief Erikson Drive and the lake, to the north of the building, is under way. The exhibit will be ready well in advance of the opening of the exposition on June 1, General Motors officials announced.

The General Motors Building is the largest erected by a private exhibitor at the fair. General Motors Corporation was the first industrial concern to lease space for a building, having signed its contract a year and a half ago. Work on the building was begun last fall.

While the structure, with its 177-foot tower, is the tallest building in the grounds, being surpassed in height only by the steel towers of the Sky Ride, General Motors officials believe it will attract more attention from fair visitors and architects because of its unusual exterior and interior construction features than because of mere size.

Albert Kahn of Detroit, whose golden-towered Fisher Building in his home city and other works have attracted wide attention, was the architect. The structure strikes a new note in the adaptation of ultra modern ideas of form and decoration to the requirements of industrial construction. It was necessary to provide for the utilitarian housing of a complete automobile chassis and body assembly plant, a little theater, a gallery of industrial art,

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OUR LEADING DEALERS

And How They Got That Way

A series of brief biographies of outstanding motor car and truck merchants.

SAMUEL TISHMAN,
President of the Broadway Motors Sales Corp., De Soto and Plymouth Dealer in New York City.

Samuel Tishman, president of the Broadway Motors Sales Corporation, has been an automobile dealer since 1919 and during that period has handled five makes of cars. He sold Ford cars for five years and then had the Oldsmobile line for two years. He switched to the Auburn company and stayed with that organization for two years. Then he became a Pontiac dealer and sold Pontiacs for six years. Now he is handling De Soto and Plymouth in the center of New York's Automobile Row.

Lots of dealers have had varied experiences in our rapidly changing field, but never have we had the pleasure of hearing a dealer talk about his relations with the various factories he has served in quite the same eulogistic terms that Mr. Tishman applies to his several manufacturers. Speaking of his relations with Ford, Olds, Auburn, Pontiac and De Soto-Plymouth, Mr. Tishman says: "It has always been my motto to do business in a straightforward and businesslike manner and in turn I have found that the manufacturers have always co-operated to the best of their ability—this of course being vital to maintaining a successful establishment.

"In my experience with the De Soto and Plymouth organizations I have found that these companies never will ask a dealer to do anything which they themselves cannot do. In my own career I never have asked a salesman to do anything that I, myself, could not do.

"For an automobile dealer to be successful, I find it necessary at all times to be on the firing line. In order to have the dealer make money, regardless of how big or how small he may be, it is absolutely necessary for him to take a personal interest in his used car department. A dealer should always take a personal interest in his salesmen's affairs. If the salesmen are happy and the proper co-operation is given them, both the salesmen and the dealer will reap the inevitable reward.

"I have found it beneficial to promote contests for the salesmen and to offer other inducements to the sales organization to enlist and maintain the wholehearted interest and co-operation of the men."

It seems to us that this is a pretty good statement of a successful dealers finding of what helps promote his business over a term of years and in a varied experience.

DAYS LIKE THESE REVEAL THE VALUE

OF A

CADILLAC-LA SALLE FRANCHISE

The period through which we are now passing brings out some very unusual advantages of the Cadillac-La Salle franchise.

In the first place, the great majority of established Cadillac-La Salle customers are still in a position to enjoy the type of transportation to which they have grown accustomed. It is not intended to convey, of course, that Cadillac's owners have escaped the effects of the general business depression; but, in most instances, at least, they have not found it necessary to forgo their fine-car ownership.

Furthermore, it is a revealing circumstance that Cadillac has been able to go ahead and make the usual improvements in its cars—not only from the standpoint of engineering, but in their appearance and quality as well. In fact, during the past three years, Cadillac has effected the greatest product improvement ever made during any similar period in its history. It was during this period, for instance, that Cadillac introduced and perfected both the twelve- and sixteen-cylinder power plants. Hence, the competitive position of its products is excellent.

It is likewise significant that Cadillac owners have been able to continue the complete and regular servicing of their cars, bringing to the service division of our dealers' business a considerable steady income. No automobile dealer need be told what an important factor this is in maintaining an establishment.

And, finally, Cadillac has continued its regular promotional service—not only directly to its dealers, but to the public as well. The company's sales promotional activities, reaching into all branches of retail selling, have never been so complete as during the past twelve months. And its general advertising, including both direct mail and publication publicity, has not only been continued, but has been made increasingly helpful.

Thus, we have four unusual reasons why holders of the Cadillac-La Salle franchise may feel that they have an exceptional investment.

There are, of course, many other advantages to the franchise, of interest to anyone contemplating a motor car dealership. If you are interested, address your communication direct to the Sales Department, 2860 Clark Ave., Detroit, Mich. All available communities have been carefully surveyed, both as to their potential and the present possibilities, and will be discussed frankly with responsible persons.

CADILLAC MOTOR CAR COMPANY

DETROIT, MICHIGAN

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

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The Contribution of Beer

BEER, in the form of a 3.2 per cent. fluid, has been legal in this country about a week. To say that America hailed the return of this modest beverage with enthusiasm is putting it mildly. In most cities where the beverage could be dispensed demand far outstripped the ability of the brewers and retailers to supply the would-be customers. It is claimed that in the two days, Friday and Saturday of last week, the national government gained $10,000,000 worth of revenue that it would not otherwise have had. It is scarcely probable that America will continue drinking beer with the same enthusiasm all the time. The curiosity factor will wear off. If beer drinking continued at the initial rate, the national government would reap a revenue amounting to more than $1,500,000,000 a year. That is a little too much to expect.

Our own interest, however, lies in the newly revived brewing industry as a customer for automotive products. The brewing companies have already bought some automotive equipment. If the sale of beer continues at even half of the initial volume, the brewers will be very important customers of both the commercial vehicle and passenger car divisions of our industry.

It is a fact that one of the breakdowns that occurred during the first frenzied days of demand was in the transportation systems of the breweries. These were not prepared to cope with the public insistence on having the new beverage. Deliveries ran away behind. Orders poured in that could not be filled.

The actual fact is that the brewing companies even now do not know exactly what they need in the way of motor transportation systems. They are groping in the dark and learning by the bitter experience of unfilled orders.

The needs of the brewing industry in the way of motor truck units, fleet operation and all the other incidentals of an efficient transportation system are up to the automotive manufacturers. Their job is supplying transportation, and they have got to work out the problems that confront the brewers in this vital division of their business.

One of the first businesses to feel the effect of the return of beer was the newspaper industry. The brewing companies, immediately the new law became effective, began a campaign of magnificent proportions to stimulate sales. It worked so effectively that the transportation system became disorganized.

One of the next industrial units to feel the stimulating effect of the renewal of activity by the brewers is the motor truck manufacturing business. The brewing industry is going to ask help from the truck makers, and in no uncertain terms, before very long. The passenger car division is going to get demands for fleets to carry salesmen on their missions for the brewing companies.

Certainly the mild 3.2 beer of today gives promise of contributing enormously to the betterment of business conditions. Perhaps it may be the little lever that will tip business off its dead center.

England Sees the End

England sees the end of the trade depression, as far as its automotive industry is concerned. The total number of cars sold in that country in 1932 was 152,882, which compares with a volume for 1931 of 139,274. These figures seem small to us, used to our mass-production returns, but for England they are remarkably good. The peak year for sales in England was 1929, when the figure was 165,341. It will be noted that 1932 came fairly close to the all-time record for English sales.

The real uplift in automobile sales in England last year did not come until August. There was no particular reason why the upturn should start, but it did, and continued through the rest of the year. Perhaps April, 1933, may show the same phenomenon in this country.

I. H. C. Augments Its Truck Line for Use by Brewers

International Harvester Company has recently augmented its line of trucks suitable for brewery use by the addition of the new two-ton chassis, powered by a six-cylinder, with a bore and stroke of 3 7/16 inches by 4 inches, respectively, which will be known as the Model B-4.

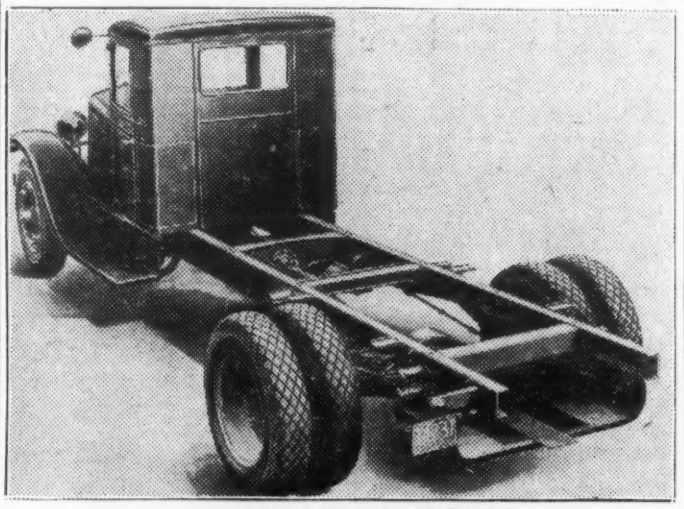
The International Harvester units have already met with considerable response from the brewing industry and its types already in operation include stake, platform and closed bodies in sizes ranging from one and a half to three and a half tons.

The engine of the Model B-4 develops sixty-three brake horsepower at 3,200 revolutions per minute. It has a piston displacement of 222.7 cubic inches. Maximum torque of 154 pound-feet is developed at 800 revolutions per minute. Both horsepower and torque figures are with all accessories running. Among the outstanding features of the B-4 engine are its 69-pound counterbalanced four-bearing crankshaft; removable cylinders, which permit replacement of one or more cylinders without the expense of reboring; hardened exhaust valve seat inserts; full-force-feed lubrication; thermostatically controlled cooling system; downdraft carburetion, etc.

The 11-inch, single-plate, vibration-damped clutch, the four-speed transmission and the engine are mounted as a unit and are suspended at three points in the chassis. Transmission reductions are: First or low, 6.4 to 1; second, 3.09 to 1; third, 1.69 to 1; fourth or high, 1 to 1, and reverse, 7.82 to 1.

Frame channels are 8 inches deep and tapered at front and rear ends to provide low loading platform height. Heavy, channel-type cross members are gusseted to the side rails. Load-carrying capacity, with an ample factor of safety, is also provided in the full-floating spiral-bevel-drive rear axle by the use of a heavy, rigid, banjo-type, malleable-iron housing. The spiral-bevel pinion and driven gear, as well as differential gears, are of alloy steels. The pinion is straddle-mounted on ball bearings. Axle reductions are 5.625 to 1 and 6.5 to 1.

Included as standard equipment on the new B-4 two-ton International are semi-elliptic auxiliary rear springs, which provide for heavy loads. Propeller shafts are equipped with universal joints of new design known as the roller bearing, anti-friction type. Each wheelbase chassis is equipped with an intermediate shaft and three universal joints. A fully inclosed ball bearing in a self-aligning housing supports the rear end of this intermediate shaft. Mechanically operated four-wheel service brakes are also standard equipment.



International Harvester Model B-4

International Harvester 3½-ton Model W-3

GREYHOUND

New York, April 14.—Greyhound and subsidiaries show for 1932, as certified by independent auditors, net loss of $10,720 after taxes, interest, amortization, etc.

COMING EVENTS

APRIL

12-27—**Milan, Italy.** International Automobile and Nautical Show.
21-21—**Cleveland, O.** National Petroleum Association, meeting.

MAY

2- 5—**Washington, D. C.** United States Chamber of Commerce, meeting.
17-18—**Tulsa, Okla.** American Petroleum Institute, mid-year meeting, Mayo Hotel.

JUNE

16-17—**Louisville, Ky.** American Automobile Association, convention.
18-July 3—**Bordeaux, France.** Seventh Automobile, Nautical and Aeronautical Show.

DETROIT PLANTS SPEED APRIL PRODUCTION

(Continued from Page 1)

cellent chance that it may go to 60,000 vehicles. It is known that Ford's Rouge plant has been turning out 2,000 units a day for some time, with further expansion in sight. The tentative schedule at Rouge was 40,000 for April, but the output will actually be nearer 50,000.

Plymouth will build between 18,000 and 20,000 units, according to an announcement by Harry Moock, the sales manager. It is understood that Plymouth's production now is running around 1,250 a day, with increases in view. The other Chrysler units will probably show an aggregate of 10,000 to 12,000 output. Hudson has lifted its production and is understood to be running through around 1,000 units a week. Pontiac will probably touch 8,000 vehicles in April. Oldsmobile is increasing its output rate, Cadillac will build between 1,100 and 1,200 units.

From this vantage point of the middle of the month it certainly looks entirely possible or even likely that April production will exceed that of the same month last year, which was 155,136. According to the present outlook, Ford, Chevrolet and Chrysler among them will account for more than 130,000 vehicle units in April. If they do this, last April's record is due for a severe fracture.

In reading these production features one fact must be borne in mind, that production today practically means sales. So closely are manufacturing operations being held to day-to-day demand that production and sales are practically twins.

If the next two weeks bring the development in the market for motor vehicles that may reasonably be expected, sentiment and morale in the automotive industry will be just about restored to its normal condition of conservative optimism.

HUPP RETAIL SALES FOR WEEK OF APRIL 8 BEST SINCE JULY, '32

(Continued from Page 1)

unmistakably pointing the way to better business.

"The spring buying season is opening this year at a far more propitious time than was the case in 1932 and as a result you are going to hear reports from many sides of business being better in 1933 than it was for the corresponding period of a year ago. Employment and buying power are on the increase resulting in a release of some of the pent-up demand that exists in the automobile field. We believe that we are just now beginning to feel the commencement of a sustained improvement."

DeWITT OPERATED HOTELS

DeWITT OPERATED HOTELS ARE LOCATED IN THE HEART OF THEIR RESPECTIVE CITIES

In Cleveland it's
The HOLLENDEN
1050 ROOMS ALL WITH BATH
RADIO IN EVERY ROOM

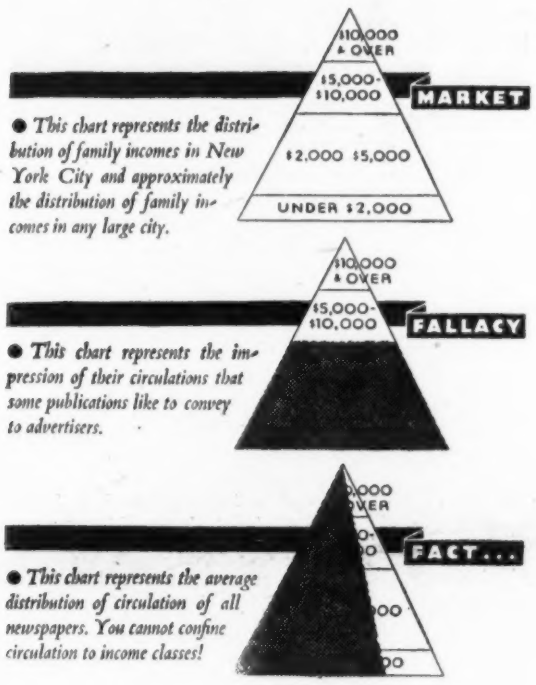
In Chicago it's
The LA SALLE
1000 ROOMS, ALL WITH BATH
"IN THE HEART OF THE LOOP"

In Columbus it's
The NEIL HOUSE
650 ROOMS, ALL WITH BATH
RADIO IN EVERY ROOM

In Akron it's
The MAYFLOWER
450 ROOMS, ALL WITH BATH
RADIO IN EVERY ROOM

feature: UNUSUALLY COMFORTABLE ROOMS, THE FINEST OF FOODS AND RATES STARTING AT $2.50 SINGLE, $3.50 DOUBLE

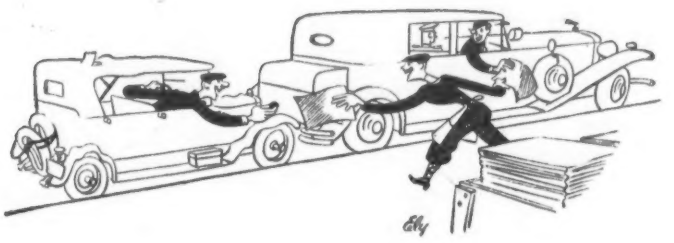
CIRCULATION IS VERTICAL NOT HORIZONTAL



● *This chart represents the distribution of family incomes in New York City and approximately the distribution of family incomes in any large city.*

● *This chart represents the impression of their circulations that some publications like to convey to advertisers.*

● *This chart represents the average distribution of circulation of all newspapers. You cannot confine circulation to income classes!*



THE chief qualification of a Cadillac owner is that he must possess the price of a Cadillac.

But the man who buys a Cadillac pays only two cents for his morning paper!

He doesn't select his newspaper on the basis of his income—but of his interests. As a human being, news interests him as it does other human beings.

There is no connection between buying habits and reading habits. If a newspaper has appeal for the wealthy, the prominent and the socialite, the same appeal makes readers among the people who haven't money, prominence or social standing.

Furthermore, there is no connection between ownership and readership. Nobody buys a Buick because he reads the Blade, or reads the Blade because he owns a Buick.

All newspaper circulation in packages of 100,000 or more is par—made up of the same kinds of people.

For years some publishers have erroneously claimed an economic superiority for their circulations—as a short cut in space selling. And some advertisers have erroneously accepted such claims—as a short cut to space buying. It's high time the advertiser got a better understanding of what makes circulation—and media.

The News has no exclusive readership among upper class incomes in New York City—nor has any other newspaper. But because The News interests more people than any other newspaper, it has more well-to-do readers. That's arithmetic!

And because The News has the most thorough coverage, seeks out more prospects for everything; because its small page delivers more of the advertising message more effectively to more of its audience; because its low rate makes it particularly economical—the automobile advertiser not in The News this year is not using the best New York medium! And incidentally, not getting the most for his money.

Are you going to sell more cars in New York this year?

THE NEWS

NEW YORK'S PICTURE NEWSPAPER

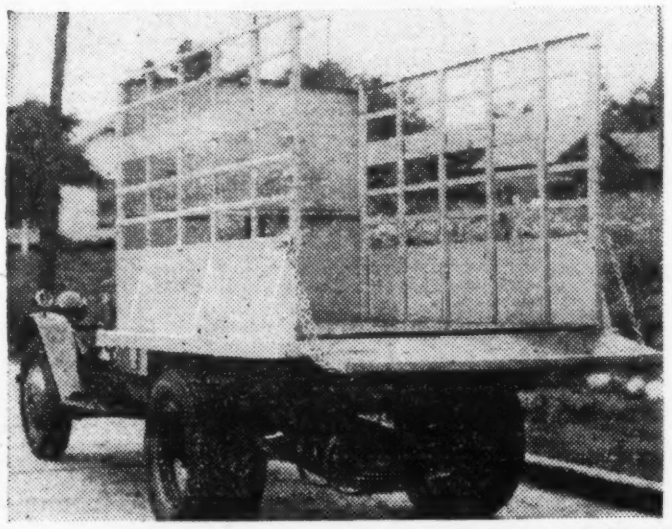
. . . with 1,400,000 circulation in the New York market . . . read by people who have from nothing to millions a year . . . and read by more of them than any other New York newspaper.

Tribune Tower, Chicago
Kohl Building, San Francisco
220 East 42nd Street, New York

Production — Engineering — Factory

Edited by Herbert Chase

AN ALL-WELDED STEEL STAKE BODY



(Abstract of a paper submitted by George E. Zeiler and John B. Sisson, chief engineer and production manager, respectively, of the Superior Body Corporation, Marion, Ind., in the second Lincoln arc-welding prize competition.

A survey of the major hauling requirements of the nation showed that the stake-type of truck body is in most general use and will continue to be for a long time to come.

This type of body hertofore has been made almost entirely of wood, almost the only metal used being steel runners on the floor, and a few metal braces and bolts for fastening the body to the truck frame.

After a thorough investigation it was decided that the most versatile type of stake body would be one with removable sides, removable top bows and drop tail gate. Such a unit would be easily convertible into any of the following types, flat-bottom, grain or farm body, cattle rack and van type by assembling top bows and adding tarpaulin top.

The matter of materials to use in building was carefully analyzed, and it was decided to build the all-welded steel body illustrated. We are able to produce the steel body cheaper than the woodin type could be produced, and delivered prices on the all-welded steel stake type of body are considerably less than for the wooden type of body. The writer considers that this was made possible only by application of electric arc welders.

As the front end and sides of the body are removable, the body can be collapsed to permit shipment under classification of flat or nested third-class freight at about one-third the rate if shipped set up.

Of course, previously manufactured wooden bodies also have been designed to knock down in shipment, but none yet designed has the rigidity of this new unit when assembled.

Lower side panels and running boards are made of one piece 12-gauge blue-annealed steel. Side braces and top side panels are also made of 12-gauge stock. The front end is 14-gauge in two pieces flanged and welded to gain strength and rigidity.

Upright stakes are made of formed 12-gauge channels welded to form tubes. Longitudinal stake braces are made of half-oval mild steel 1¼ x ⅝ in. size, welded to upright stakes. The tail gate is 12-gauge steel single-flanged with wood filler or double flanged with no filler. This gate is hinged and supported with coil-proof chain. This nine-foot body complete weighs slightly less than 900 pounds.

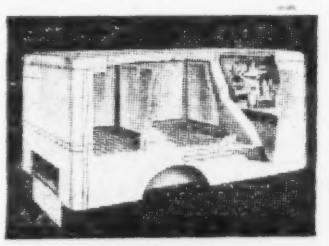
DETROIT PONTIAC DEALER IN LARGER QUARTERS

Detroit, April 14.—In order to permit the expansion of both sales and service facilities for the Pontiac straight eight in Highland Park, the Clark Auto Sales moved last week from the former location at 12853 Woodward Ave. to new and larger quarters at 12893 Woodward Ave., near Avalon Avenue.

REFRIGERATED LINE OF HERCULES TRUCKS READY FOR BREWERS

Hercules Products, Inc., Evansville, Ind., is marketing a line of refrigerated truck bodies suitable for the transportation of ready-to-drink beer and other bottled products.

These bodies are available with



MODEL 330-DIS

either mechanical refrigeration, CO_2 patented controlled temperature refrigeration or salt and ice refrigeration. All bodies are available for varying size chassis and are also

MODEL 3924

built for semi-trailer and trailer units.

In the accompanying illustrations shown are interior cutaways of the Hercules 330-DIS CO_2 controlled temperature and the 3924 mechanically refrigerated units.

MANNING MADE DIRECTOR PAN AMERICAN AIRWAYS

Jersey City, N. J., April 14.—L. B. Manning, chairman of the board of American Airways, Inc., and president of Aviation Corporation, was elected a director of Pan American Airways, Inc., at the annual stockholders' meeting held here.

NAT'L LUBRICATION ENGINEERING MEETING SCHEDULED MAY 25

New York, April 14.—The tentative program for the lubrication engineering meeting to be held at the Pennsylvania State College, May 25, 26, is as follows:

THURSDAY, MAY 25

10.30 a. m., Opening Session—"Practical Interpretation of Lubricant Specifications," by J. G. O'Neill, U. S. Engineering Experiment Station, Annapolis, Md.

2.00 p. m., Machine Design Session—"Machine Design for Lubrication," by E. M. Barber and C. C. Davenport, Pennsylvania State College. "Roll Neck Lubrication," by W. D. Hodson, Hodson Corporation, Chicago, Ill.

8.00 p. m.—"Lubricant Viscosity Standardization for Industrial Equipment," by Dr. A. E. Becker, Standard Oil Development Company, New York, N. Y.

FRIDAY, MAY 26

10.00 a. m., Gear Session—"Applications of Extreme Pressure Lubricants to the Lubrication of Industrial Machinery," by Dr. O. C. Bridgeman, Bureau of Standards, Washington, D. C.

"Problems of Lubricating Heavy-Duty Gears," by Austin Kuhns, Farrell - Birmingham Company, Buffalo, N. Y.

2.00 p. m., General Session—"Wire-Rope Lubrication: (a) Hemp-Core, (b) Wire Strands, (c) Relubricating in the Fields," by A. J. Morgan, Roebling & Sons, Trenton, N. J.

"Discussion on Friction of Wire Ropes in Sheaves," by L. M. Tichvinsky, Westinghouse Electric & Manufacturing Company, E. Pittsburgh, Pa.

"Some Practical Factors Affecting Design and Operation of Bearings for Large Rotating Apparatus," by T. W. Gordon, A. C. Engineering Department, General Electric Company, Schenectady, N. Y.

OFFERS TWO-STAGE COMPRESSOR UNIT

Worthington Pump and Machinery Corporation, Harrison, N. J., has announced a complete line of V-type, two-stage, air-cooled air compressor units especially designed for automotive service. These units embody what is termed the feather valve, distinct from the poppet type. It consists of one or more strips of ribbon steel operating between a curved guard and a flat seat with drilled or slotted openings. The valve is designed to open and close without impact.

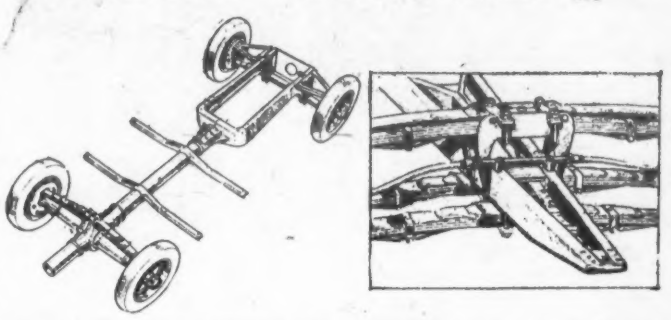
The new compressors are offered in a range of sizes to furnish from 3.9 to 34 cubic feet of air per minute at pressures up to 200 pounds per square inch. Features include counterbalanced crankshaft, full-floating wrist pins, honed cylinders, silent-suction muffler and Timken roller bearings. Motor and compressor, connected through a Worthington multi V drive, are mounted on a channel base resting upon a horizontal air receiver, the base being joined by straps to sturdy iron floor saddles.

Inclosed in the crankcase is a centrifugally operated automatic mechanical unloader, providing positive operation of by-pass needle valve for unloading the compressor in starting. A spring-loaded air safety valve gives adequate protection against excess pressure. An air operated electric pressure switch provides fully automatic start and stop control.

OKLAHOMA GAS TAX DIVERSION THREATENS ROADS

Oklahoma City, Okla., April 14 (UTPS).—The passage of a measure in the Oklahoma Legislature to divert 40 per cent. of the gasoline taxes to pay off the state's other governmental debts is expected to put an end to the gigantic road construction program in Oklahoma.

Center-Tube Frames



Several European designers of passenger cars have committed their companies to the use of frames in which a central tube is substituted for the conventional type of chassis frame. Most, if not all of these cars, use independently sprung wheels and are said to give excellent riding qualities, especially on the rough roads which prevail in many countries of Europe.

Apparently few, if any, of these pivot the third point of support of the tubular structure, but depend upon the frame to take the twisting stresses which are not avoided, as some appear to think, by the independent springing of four wheels. Two illustrations of center-tube frames used respectively by Austro-Daimler and the German Stower (as published in the Motor) are here reproduced.

G. E. ANNOUNCES NEW RADIO

A radio receiving set with dynamic speaker, all contained in a single metal case which can be attached with only one bolt, has been announced by the General Electric Company. It is connected to the car battery by the ammeter, and requires no additional batteries. A remote-control box can be clamped in any position on the steering post or on the instrument panel, within easy reach of the driver.

Ignition interference has been eliminated by double-shielding of the vibrator power supply, complete shielding of the entire equipment, and use of a tone control to reduce noises met with in noisy locations.

The set is mounted on a single stud, needing only one half-inch hole in the dash for mounting. There is a new vibrator-type of "B" battery eliminator, doubly shielded, and three of the four tubes are of new types. These are a radio frequency exponential pentode, type 78; a seven-element type 6A7; and a duo-diode pentode, type 6B7. The output tube is a type 89. The use of tubes with multiple functions results in seven-tube performance with a four-tube set.

Automatic volume control and two-point tone control are provided. The control box is fitted with a lock switch, the key being used also to operate the manual volume control. If servicing is required, the entire set is easily removed from the mounting plate when six screws are taken out.

The new set lists at $34.95, installed to antenna.

NEW STONE ELEMENT FILTER

A new oil filter is being offered by the Klemm Automotive Products Company, Chicago. It embodies a stone element instead of the usual felt, waste, or metal strainer. Oil is filtered through the pores in this element and it is claimed that particles as small as two ten-thousandths of an inch are removed.

The stone element is treated with certain chemicals, baked in and made a permanent part. These chemicals are claimed to neutralize the acid that forms in oil.

No refills are required, and the manufacturer claims the filter will last the life of the vehicle in which it is installed.

The filter is easily cleaned. A few turns o fa knob cause a stiff brush to clean the entire surface of the stone element. By removing the plug at the bottom, impurities can be drained out.

Another feature of the filtrator is a safety valve below the filtering chamber. This allows oil to flow freely when starting the engine on a cold day. As soon as the hardened oil softens, the valve closes and oil again flows through the filtering chamber. The filter is said to fit all cars, buses and trucks with a change only of fittings.

HARDWOOD SHIPMENTS

Flagler Beach, Fla., April 14.—Fifty thousand feet of ash is being shipped weekly from Flagler Beach to the port of Jacksonville. This timber is being gotten out for Hardwoods, Inc., distributors and exporters of ash for automobile bodies.

PERTINENT POKES and PARRIES

By HERBERT CHASE, Engineering Editor ◆◆ BY READERS

Unconventional Transmissions

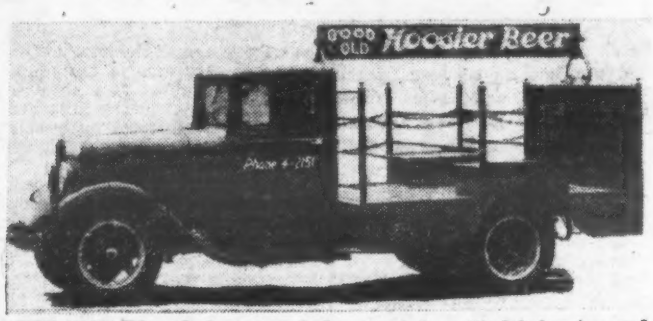
Rumor has it that one of the largest automobile manufacturers has recently signed a royalty contract calling for the annual payment of upward of $75,000 for the rights on an unconventional form of transmission. We have no details as to the type of product involved, but if the report is true (it comes through channels we are inclined to credit), it seems to indicate a growing interest in ways of improving this phase of automobile design.

Ordinary gearsets of the modern type, when used in combination with powerful engines, are dependable and moderately satisfactory to the skilled driver, but they present a difficult problem to the learner and involve a control which even the experienced driver would like to see eliminated. The difficulty, of course, is to make a simple and dependable device that is not too costly to manufacture. Many problems are involved, and they are not easy of solution, as many an engineer of ability can testify.

Besides convenience in control, the right type of automatic transmission will make it possible to use a smaller engine and one much more economical in fuel, both of which are desirable so long as performance in other respects is satisfactory.

There probably are several possible answers to this problem. If any of our engineering readers know them or have constructive comments to make on the subject, we shall be pleased to hear from them.

Edwards Beer Case Body on Studebaker Chassis



THE NEW Edwards beer case body mounted on Studebaker ton and one-half ton chassis of 141 inch wheelbase

The Studebaker - White - Indiana combination in the commercial car field offers a wide selection of truck equipment for the brewing industry. While in this range are trucks suitable for heavy long distance hauling, as well as local delivery, an interesting unit is that developed in connection with the Edwards Iron Works of South Bend, Ind.

While the Edwards body was originally designed for the Studebaker chassis, there are twenty-two White-Studebaker and Indiana chasis of 138-inch to 195-inch wheelbases, with capacities from 1½ to 3 tons, which the Edwards bodies will fit.

The new Edwards all-steel beer case body is designed for carrying 80 to 150 cases.

Edwards engineers in designing this body made wide use of channel steel, specially formed floor plates and angle irons, all electrically welded and forming a strong, light weight body unit. It is Edwards' contention that correct body design and fabrication is just as important to brewers and distributors in effecting economical deliveries as the truck chassis on which they are mounted.

Facility in loading and delivery is gained by the low bed of the body, which is but thirty-three inches above the ground on the average one and a half ton chassis. This brings the bottom of the top tier of cases fifty-five and a half inches high. The steel skirting edge, one inch above the floor, and the sturdy steel cross channels prevent the load shifting or lost cases while the truck is in transit. Further protection to the load is given by chain guards, whih are equipped with heavy snaps.

Added strength is given the entire body structure by the "channeled" floor. Depressions one and a half inch wide and one and one-eighth inch deep at six-inch intervals increase the rigidity of the platform. The steel boxed wheel housing has the same construction as the floor, plus the added strength of two square hollow steel posts.

The Edwards beer case body illustrated herewith is mounted on a Studebaker one and a half ton chassis of 141-inch wheelbase. It has a capacity of eighty cases. Atop the body is a rigid twelve-inch sign supported by a decorative scroll. At the rear there is an unbroken display space seven feet wide by four feet high.

AUTOMOBILE RADIO ENGINEERS MEET

(Continued from Page 1)

next meeting and final by-laws adopted. One of the most interesting features of the organization is the fact that with the adoption of a slogan that "No automobile radio is any better than its proper installation," no new member applications from other installation service stations will be accepted until the applying member shall pass certain tests in radio installation and shall prove his ability to handle service problems after installation of the set.

These tests shall be conducted by a technical committee composed of three members of the organization. This same committee will also confer with automobile manufacturers from time to time to assist in the engineering of new models of cars for the best methods of automobile radio installation. This co-operation with automobile manufacturers will result in simpler installations than at the present time, and it is expected that it will extend to the radio manufacturers themselves who will act upon suggestions by the committee and build car sets which may not only be installed easily but which will be adaptable to certain cars in particular.

The meeting was concluded by a talk by E. M. Lubeck of the Dealers Service Bureau of Bloomfield Hills, Mich., who spoke on several new phases of service from a radio standpoint.

FORD DISMANTLING CLEVELAND PLANT

(Continued from Page 1)

truck. The work of dismantling the plant has been going on for several weeks, bins, cribs and wall racks being torn out and tools and machinery and trucks being sent to other places. The parts department has been moved to Buffalo.

W. W. Mitchell, local manager who succeeded Allen B. Pease, is in Detroit on business for a few days. Aubrey L. Edwards, plant superintendent here for several years, has been transferred to Louisville. R. A. Hayes came to Cleveland from Columbus.

REPUBLIC STEEL SPEEDS

Massillon, O., April 14.—A third furnace has been lighted at the local plant of the Republic Steel Corporation, according to announcement made by officials of the company. Early last week only one furnace was in use, but later in the week another was lighted. Officials of the plant said this week the outlook for the future in automotive steel was much improved.

RECORD IN CANTON

Canton, O., April 14.—Sales and transfers of motor vehicles in Stark county Monday totaled 100, according to records in the bill of sale department of the court house. This is a new record for a single day's business. Of this number, sixteen were new automobiles.

Chrysler Sees Stimulus Of New Cars Aiding Revival

Detroit, April 14.—"No man with an honest product to sell need be afraid of the future. And no man with a hard-earned dollar to spend should be afraid to spend it."

W. P. Chrysler

Walter P. Chrysler made this statement today, following the announcement of the De Luxe Plymouth Six, a slightly higher-priced addition to the present line of Plymouth automobiles. Plymouth, last year, was the only automobile company in America to increase its sales—registering 119 per cent. of 1931.

Mr. Chrysler stated, in part:

"There is no patent remedy that will bring prosperity back to America. The one way that business can most quickly regain its normal stride is by the introduction of products of such outstanding value that the public will buy in increased numbers, thus placing money in circulation and clearing the clogged channels of trade.

"Throughout the difficulties of the past few years Chrysler Motors has forged steadily ahead. Last November, we said that we did not believe in waiting around ourselves, nor in asking anyone to wait around for us; that the way to get things started was to start. And even during the recent bank crisis not a day passed that shipments did not leave our factories.

"I have said that I believe that this is a time of opportunity—that we should apply to our own business the sound principles urged by the President upon the people at large: 'Courage and confidence.'

"Right now we don't have to spend over our heads to enjoy the good things of life. We can buy good clothes, good furniture, better houses, choicer foods for less money than we have been able to for years. Values were never so high in any line, including automobiles. Prices were never so low, due not only to lower commodity prices, but to economical manufacture.

"No man with an honest product to sell need be afraid of the future. And no man with a hard-earned dollar to spend should be afraid to spend it. It's simply a matter of getting together—buyer and seller. That's what is going to put more men to work.

"It's up to us as manufacturers—it is up to our dealers—to show the public how much good sense there is in buying today. And it's up to buyers to look into what the dollar will buy today. When the two get together—when sellers in any line make clear how much they are real-

(Continued on Page 11)

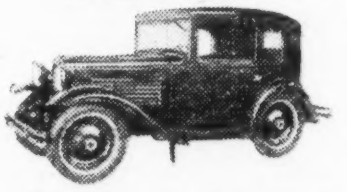
"*Austins* for the Brewing Industry?"

CERTAINLY!

Sell to the *busiest* business in America . . .

Brewers' salesmen must have a handy economical car to get around in. Brewers must have small delivery cars for small, quick deliveries. Sell them Austins!

IDEAL FOR BREWERS' SALESMEN



The brewer can buy two or three Austins for the cost of one larger car. He can run three for the cost of running one larger car. He can travel two or three salesmen for the cost of traveling one in a larger car.

The Austin saves time. It gets them around—darts in and out of traffic with surprising speed — parks almost anywhere. *Means*—to the brewer—*more calls per day!*

The Austin saves him money. We'll say it does! . . . Goes 40 miles on the gallon, 30,000 to 40,000 miles on a set of tires. Costs 6/10 of a cent per mile for gas, oil and tires. *Means more calls at much less cost!*

There's room in an Austin Panel Delivery for 20 cases. There's room in an Austin Coupe for salemen's samples . . . Then, too, the Austin is unusual in appearance. It still has unusual attention value. It helps advertise a brewer's name.

It's up to you, Mr. Dealer. Sell Austins. Sell fleets of Austins.

The Austin is easy for your customer to buy. (Lists from $275 to $385.) . . . *And it's easy for you to handle.* Low taxes, small investment, fast sales. Less floor-space needed. And transportation—8 to the freight car. Or drive-away from Austin warehouses in 15 key cities . . . You'll find it profitable to sell Austins to the Brewing Industry. You'll find it profitable to sell Austins to *everybody!*

Austin is not too small . . . other cars are just too big.

AMERICAN AUSTIN CAR CO., Inc.
BUTLER, PA.

SELF-MAINTENANCE OF TRUCK FLEETS CONTRASTED WITH THE "ORGANIZED SERVICE STATION"

By G. J. M'DONNELL

Self-maintenance of truck fleets with the "organized service station" is contrasted by H. V. Middleworth, superintendent of maintenance for the Consolidated Gas Company of New York.

"The conditions under which motor vehicles operate are so varied," he says," that it would be extremely difficult to arrive at any fixed or definite rule governing the method of maintaining motor vehicle fleets. Furthermore, it would be difficult to determine what the minimum number of vehicles should be to justify the establishment of a self-maintenance organization.

"We speak of large operators and small operators, but just where to draw the line between the two is without doubt a difficult problem. Suppose we call a large operator one who operates forty vehicles or more and a small operator one who operates less than forty vehicles. It is obvious that the large operator with equipment separated into small fleets in remote localities would bring his problem into the same class as a small operator. With such a condition existing, it seems reasonable to assume that service station maintenance would be more economical.

"Before any definite conclusion is reached regarding the advisability of service station maintenance, a careful study should be made of the conditions under which the fleet operates. If it is found that it is broken up into small fleets of, say forty vehicles or less, operating in several separate and remote districts, necessitating many miles of travel to and from a central repair station the self maintenance from an economical point of view would seem out of the question. If after careful study it is decided that service station maintenance is desirable, a thorough survey should be made of the service station facilities available in the districts where the vehicles operate.

"In this connection it is generally understood that service station managers are glad, and usually eager to get work from responsible concerns. They are also willing to allow a satisfactory discount on work done for such concerns. It is understood that work of this nature is frequently given precedence over other work that is considered of less importance. Arrangements may be made with service stations to do work at night, thereby eliminating the necessity of laying up the vehicles for repairs during the daytime. Arrangements may be made also to have the painting done over week ends, in order that time out of service may be reduced to a minimum. Service station maintenance with regard to passenger vehicles is usualy found to be satisfactory.

"In viewing this question from a

(Continued on Page 14)

A Wonderful Value:

INTERNATIONAL HARVESTER

ANNOUNCES A NEW 2-TON TRUCK

AT $995 for 145-in. wheelbase chassis, f. o. b. factory (tax extra)

OFFICIAL registrations on all new trucks of 2-ton capacity and over, sold in 1932, show that better than ONE *in every* FIVE is an International.

There are three reasons for such preference for Internationals: (1) long-lived efficiency, (2) operating economy, and (3) matchless International Harvester after-sale service.

AND NOW INTERNATIONAL HARVESTER OFFERS THIS GREAT 2-TON CHASSIS VALUE AT $995, of the same high quality that made the International sales record possible.

Come in and see this great 2-ton International value. We also offer parallel values in the smaller sizes, with a new Half-Ton, 6-Cylinder chassis at $360, f. o. b. factory.

The new B-4 *comes in three wheelbase lengths:* 145-*in.*, 170-*in.*, 185-*in. Equipment for all types of load. Other models to* 7½*-tons.*

MODEL B-4 FEATURES

Frame: 8-inch channel type.

Engine: 6-cylinder. Develops 63 h. p. Removable cylinders. Counterbalanced crankshaft. Exhaust-valve seat inserts. Full-pressure lubrication. Thermostatically-controlled cooling. Down-draft carburetion. Air cleaner.

Transmission: Four speeds forward.

Rear Axle: Full-floating spiral-bevel-gear type.

Springs: Semi-elliptic front and rear, with semi-elliptic auxiliary rear springs.

INTERNATIONAL HARVESTER COMPANY of AMERICA (Incorporated)

606 S. Michigan Ave. Chicago, Illinois

INTERNATIONAL TRUCKS

BUSINESS SET TO "GO," HUDSON EXECUTIVES REPORT AFTER TRIPS

(Continued from Page 1)

lar attention conditions forming the background of automobile dealer activities—conditions in the New England cotton and woolen mills, in the shoe industry and other lines representing local and sectional purchasing power from which motor car dealers derive much of their business.

"Wherever I went," says Hudson's sales head. "I met a good deal more than just a spirit of returning confidence. Among the things I did observe were distinct rises in employment figures, numbers of factories working to capacity. One large shoe plant was reported to have raised wages a week previously. Another, which after a long shut-down had opened with ninety hands a few months ago, now has 2,000 workers on its pay roll. Industrialists with whom I conferred were outspoken in looking for the early return of a prosperity greater than that which their lines enjoyed from 1925 to 1930.

"I found our dealers well informed regarding local and general conditions, and quite openly cheerful. Retail deliveries were increasing in every town I visited. For most localities the bank situation had cleared, and there were places in thrifty New England that had no bank problem. I have come back very much encouraged. Business will be good in the Spring and Hudson-Essex merchants will get a fair share of it. What we know as the 'spring peak' will be a bit later this year, and it will last longer."

W. R. Tracy, sales manager of Hudson Motor Car Company, who covered the more important distributor and dealer locations of western New York, spent considerable of his time in investigating conditions in the Rochester and Buffalo areas. Perhaps his most significant observation relates to the changed attitude of the public, the greater number of showroom callers who are not mere "lookers," but whose interest may be translated into sales.

"That spending fear which I observed on my last visit to the territories," Mr. Tracy says, "has almost entirely disappeared. Car buying is easier than it was a few weeks ago. Not only that, but dealers are building up substantial banks of unfilled orders which will count heavily in the sales returns of the second half of April.

"Hudson-Essex dealers are determined in the belief—and who should know better than they, who are on the ground?—that spring business is again available in satisfactory volume; that the signs are also good for continually improving summer and fall business.

"The tendency of merchants in all lines of business to carry very short inventories is giving way to judicious buying. Grocers and department stores are preparing for the immediate future by laying in stocks. This action is also taken by our own dealers, whose orders are being received in constantly growing volume at factory headquarters."

LOWER FARM FREIGHT RATES INDICATED

(Continued from Page 1)

the National Farm and Home Hour, April 8.

"The present level of freight rates is 50 per cent .above the pre-war level," said Mr. O'Neal, "while farm prices are, roughly, 50 per cent. below pre-war level. Freight rates should be lowered and farm prices raised until parity is reached.

"Those who seek to make barge lines and motor transportation more costly by adding high taxes or by arbitrary government rate fixing are not in harmony with Farm Bureau policies or the public interest. I hope that President Roosevelt will not include such proposals in his recommendations to Congress on transportation problems. The public is entitled to the benefits of these cheaper forms of transportation."

Continental's Economy Unit Boon to Brewing Industry

Continental Motors Corporation offers the brewers of America an economy as high as 30 miles to the gallon and 1,000 miles on a quart of oil for its automobiles—a car that is lower in price than any other of full size—a thirty-year reputation for dependability — and a special package delivery truck with many unique features.

Four lines of motor cars are manufactured by the Continental Automobile Company. At least three of these models are ideally suited to manufacturers and sales representatives of the beverage industry, in the belief of Henry Krohn, general sales manager of this Continental subsidiary. These models are the four-cylinder Beacon, termed "the lowest priced, full sized car in America," with list prices ranging from $355 to $395; the de luxe model Beacon priced from $425 to $460; the six-cylinder Flyer with list prices from $450 to $535; and the larger and more luxurious Continental Ace listing from $725 to $815. All prices are f. o. b. factory.

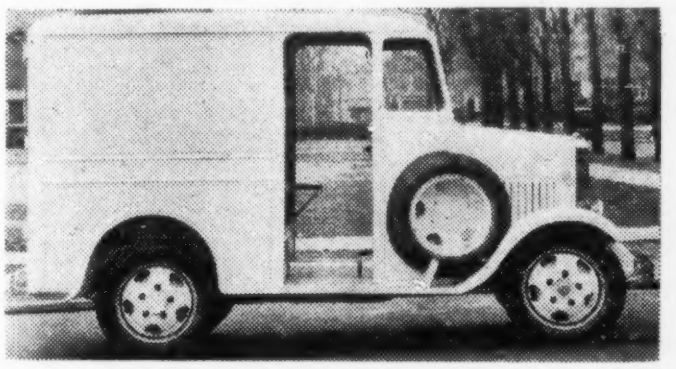
For house-to-house delivery, brewers will be interested in the DiVco Delivery, product of Continental-DiVco, another Continental Motors subsidiary. Three models are available with f. o. b. prices of $1,295, $1,395 and $1,595, for the two four-cylinder and six-cylinder jobs.

The DiVco lines employ insulated, streamlined bodies and are powered with Continental Red Seal engines. An important feature is the "Step-Seat" control, which permits operation either from the driver's seat or from the driving platform. This development is adaptable to both long hauls with few stops and short runs with frequent stops.

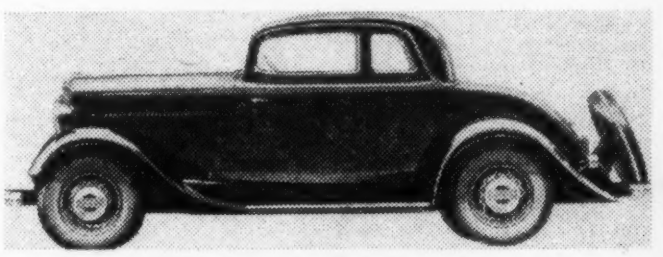
The DiVco type of house-to-house delivery was pioneered by the milk industry and resulted in a great reduction of delivery costs, according to John Nicol, vice-president and general manager of the company. It is his contention that DiVco units are the lowest cost-operating vehicles in the house-to-house delivery field today. Capacity rating of DiVco units is 3,000 pounds. Wheelbase is 109 inches, overall length 176½ inches, gross weight of chassis and body only 4,500 pounds.

"The new Beacon and Flyer cars are ideally suited to the requirements of brewing executives and salesmen, as well as for small package deliveries," according to Mr. Krohn of the automotive division. "The brewing industry demands economy. This important feature is a vital part of both models. While the Beacon will travel twenty-five to thirty miles on a gallon of gasoline, the six-cylinder Flyer is proportionately economical, with a gasoline mileage of from twenty to twenty-five miles per gallon. Yet this is only part of the story, for the upkeep or maintenance costs of these two new cars is exceedingly low. Such maintenance costs are constantly sought by the fleet operators. All Continental automobiles employ special Continental Red Seal engines."

The Beacon line includes a coupe with rumble seat, commercial coupe, four-door sedan and two-door sedan. Both sedans seat five passengers. The de luxe Beacon includes a coupe with rumble seat, a five-passenger four-door sedan and a commercial coupe. The six-cylinder Flyer is made in these body types: five-passenger sedan with four doors, commercial coupe, two-door sedan for five pasengers, coupe with rumble seat. The Continental Ace line includes both a standard and a de luxe body and a coupe with rumble seat.



CONTINENTAL-DIVCO house-to-house delivery



CONTINENTAL 4, coupe with rumble seat

BREWERS URGED TO AVOID MISFIT TRUCK EQUIPMENT

(Continued from Page 1)

for handling cases and others designed for handling barrels, some will need equipment for handling both kegs and cases in one unit.

Builders of motor trucks, trailers and passenger car fleet units have not been unaware of the needs of the brewers when and if beer were permitted to cast its golden glow over this fair land of ours. During the past several months engineers, body designers and sales forces have been busily engaged in the task of designing and selecting equipment which would best fit the brewer's needs when that happy day came. It is with the idea of acquainting the brewing industry with accomplishments of the motor industry in respect to brewery transportation equipment that this issue of Automotive Daily News is being mailed to all licensed brewers throughout the United States today.

The strides that the automotive industry has made in meeting the brewer's needs are remarkable. While it is impossible to cover this advance in one issue, a comprehensive outline of present offerings are included in this issue. Body types and chassis specification, from which brewers can make an intelligent selection to meet almost any individual problem, are offered.

Brewers should not overlook—and truck sellers should not fail to emphasize—the fact that a MISFIT TRUCK IS INEFFICIENT AND COSTLY.

AL BROWNELL RESIGNS

New York, April 14.—Al Brownell, editor of Commercial Car Journal for a number of years past, has announced his resignation.

Wise Sees Trend Toward Semi-Trailer in Beer Hauling

By W. D. WISE
Fruehauf Trailer Company

Regardless of whether beer will be transported in kegs or cases, the trend seems to be toward the use of semi-trailers equipped with fully inclosed van bodies.

The advantages of the tractor trailer haulage method itself are numerous—lower investment, lower operating cost, bigger loads, greater flexibility, less garage space required, longer life of equipment, etc.

However, there are also several advantages of special appeal to the brewery industry; namely, easier loading and unloading, protection for the load and advertising value.

Easier loading and unloading and protection for the loads result directly from the low platform height the semi-trailer provides. This height varies from 30 to 36 inches, depending upon the type of trailer used, and makes it a simple matter either to roll kegs or carry cases into or out of the body. Also, this low center of gravity means greater stability at high speeds on curves, etc., the elimination of sidesway which is so damaging to fragile loads.

From an advertising standpoint, the tractor trailer unit is in reality a traveling billboard. Its sweeping lines and attractive paint job make it the center of attention wherever it rolls.

The trailer shown here has a capacity of 600 quart cases, which is a total load of approximately 12 tons. However, the average load hauled is 8 tons, as the cases are not loaded clear to the top of the body.

REEVES SAYS STATES BETTER UNDERSTAND CAR OWNER'S RIGHTS

(Continued from Page 1)

which would have injured highway users, none of these measures were passed by the Legislature.

Not only did the lawmakers reject bills providing for increases in gasoline taxes and registration fees and for more drastic regulation of commercial vehicles, but they also repealed the 65 per cent. truck and bus surtax adopted a year ago. The Legislature's action received encouragement not only from those organizations identified directly with highway use, but also from the farm, dairy and other industries in the state which are large users of highway equipment.

Several states, including Arkansas, Kansas, Oregon and Idaho, have reduced motor vehicle registration fees, in some cases as much as 70 per cent. In Oregon the price of license plates was reduced to $2.50 per vehicle, but the benefit of this action, as far as highway users are concerned, was partially offset by an increase of 2 cents in the gasoline tax.

Only one state, South Dakota, authorized a diversion of gasoline tax funds to other than highway purposes. In that state a measure was passed authorizing the payment of 50 per cent. of the income from the gasoline tax to the rural credit bond and interest fund.

Four made some increases in bus and truck taxes, one in gasoline taxes, five reduced size allowances, although two of them increased the length for single units; weight restrictions were lowered in three states and increased in one. Regulation of trucks or buses has been extended in some form in five states; registration fees have been increased in two states and there have been reductions in three states.

Of the 5,000 motor bills, approximately 250 dealt with the regulation of for-hire motor vehicles; 400 affected registration fees and special taxes, other than gasoline taxes; 150 pertained to motor vehicle sizes and weights; 150 related to some phase of gasoline taxation, and the rest dealt with motor vehicle equipment, traffic rules and regulation, financial responsibility and other subjects relating to the operation of motor vehicles.

Most of the states which have already adjourned are devoted largely to agriculture. They are: Arizona, Arkansas, Georgia, Idaho, Indiana, Kansas, Maryland, Montana, New Mexico, New York, North Dakota, Oregon, South Dakota, Utah, Vermont, Washington, Wyoming and West Virginia.

Among the states still in session are: Illinois, New Jersey, Pennsylvania, Ohio and the New England States.

CHECKER CAB

New York, April 14.—Checker Cab Manufacturing and subsidiaries for 1932 report net loss of $821,105 after depreciation, interest, taxes, etc. This compares with net profit in 1931 of $431,168, equal to 99 cents a share on 433,447 no-par shares of capital stock.

MARCH TRUCK SALES OFF IN 17 STATES

(Continued from Page 1)

of 130 trucks sold this March against 87 in that month a year ago.

The table of commercial vehicle sales to date follows:

	March, 1933	March, 1932
Connecticut	153	240
Delaware	47	56
Florida	201	260
Idaho	18	41
Maryland	163	256
Michigan	319	576
Minnesota	264	571
North Carolina	199	321
North Dakota	16	59
South Carolina	130	87
South Dakota	39	90
Rhode Island	62	101
Utah	50	95
Virginia	262	334
West Virginia	105	147
Wisconsin	191	493
District of Columbia	73	169
Total	2,292	3,890

SHANK-COBLEY, INC., TAKE DE SOTO-PLYMOUTH LINE

Toledo, O., April 14.—The Shank-Cobley, Inc., Willys-Overland distributors here for the last ten years, have been appointed distributors for De Soto and Plymouth motor cars for Toledo and seventeen counties in northwestern Ohio and southern Michigan. The company is headed by Waldo H. Shank and James W. Cobley.

Territory of the new distributors includes the district east to include Sandusky, south to Findlay and Lima, west to Bryan and north to Adrian and Monroe. Dealerships already have been established throughout the territory by the Shank-Cobley organization.

CRUDE RUBBER USE

Washington, April 14.—Though consumption of crude rubber in the United States in 1932 dropped to 332,000 tons, as against 350,000 tons in 1931, its use held up strongly when compared to the sharp slump in the use of reclaimed rubber, according to the annual survey of the rubber division of the Bureau of Foreign and Domestic Commerce. Consumption of reclaimed rubber amounted to 77,500 tons in 1932, as against 123,000 tons in 1931.

Hupmobile prospects wear labels

A SMART dealer knows the cost of finding prospects. He knows that *selling* is more profitable than *searching*.

Hupmobile dealers are fortunate because Hupmobile prospects are identifiable. These "careful investors" stand out in any community. No need to ring doorbells to locate them.

Many are already Hupmobile owners. (Hupmobile repeat business has never fallen below 46% in any year.) All are men and women whose careful judgment in every business transaction gives them an identity and a prominence beyond mere listing in the 'phone book, or even the Blue Book.

Being careful investors, they have money and are able to buy—*even now*. And they *are* buying the New Silver Anniversary Hupmobile—especially the big 90-horse power, 121-inch wheel base Sedan that lists at $995.

Write today (without obligation) for more information about the Hupmobile opportunity right at your door.

HUPP MOTOR CAR CORPORATION
DETROIT, MICHIGAN

New Nash Big Six Available For Brewers' Sales Force

The new Nash Big Six light passenger car unit is now available to brewers' sales forces in the new day of beer distribution. Its new and larger motor develops seventy-five horsepower. Its 116-inch wheelbase and extra large body, its wealth of big car features—all make it particularly valuable to the salesman who has to cover a wide territory swiftly.

This powerful new car was designed to provide motorists with the most outstanding low priced six on the market today, from the standpoint of appearance, size, engineering and price.

With such refinements as the completely new and larger motor, new double-action thermostatically-controlled hydraulic shock absorbers, metal spring covers, new and stronger X-dual frame, new cast iron and steel brake drums, new instrumental panel, new light depressed beam control on the floorboard, and non-shatterable windshields, the series promises to dominate its field.

The 1933 Nash Big Six constitutes the biggest dollar's worth ever offered by the company, yet the Nash factory has priced it so low that the 1933 four-door five-passenger sedan at $695 f. o. b. factory, actually sells for $130 less than the comparable car in the 1932 Big Six line!

Chicago brewers are well aware of the advantages, the dependability and the economy of Nash standardization for their retail and wholesale sales program. One striking example of the success of Nash traveling equipment in the brewery business is apparent in the Prima Company's field organization. Thirty fast and sturdy Nash cars make up the Prima sales fleet and the personal cars of Prima officials. Most of them are late models, with the Nash Big Six predominating. The Prima Company has standardized on Nash equipment for years and its officials are enthusiastic in their praise of Nash performance. They declare that thirty to forty thousand miles of hard road work without major attention is common Nash performance.

Nash engineers have redesigned the Big Six motor, made it larger, heavier in every way; increased the bore and stroke to 3¼ by 4⅜, with 217.76 cubic inches of piston displacement. It contains larger valves, larger bearings, deeper head and double-ribbed motor blocks for extra strength. The motor is so quiet, so powerful, that by actual test drivers have found it difficult to differentiate it from the famous Nash straight eight engine.

In addition, the X-dual frame has been made stronger by extending the rear X-sub-frame flanges through the middle of the rear kick-up.

Another important feature is the new type double-action, hydraulic shock absorbers, which absorb the body shock both up and down, thermostatically regulated for both summer and winter driving. Through the vane principle, they vary the spring resistance to the speed of the car and the roughness of the road. They are entirely automatic in action and provide the best possible ride control in all temperatures without effort on the part of the driver.

Comfort and safety refinements include shatterproof windshield glass as standard equipment in all models, location of headlight dimmer control on the floorboard, new windshield operating mechanism, convenient grouping of controls on steering column and new instrument panel.

Four body styles are available in the new Nash Big Six series: five-passenger four-door town sedan, $695; five-passenger four-door sedan, $745; two-passenger coupe, $725, and the four-passenger coupe with rumble seat, $745. All prices f. o. b. factory.

G. M. COMPLETES ITS BUILDING AT CENTURY PROGRESS EXPOSITION

(Continued from Page 3)

research laboratory equipment and display space for products ranging from automobiles and huge Diesel engines to the tiniest ball bearings. At the same time it was required that the designer preserve an external appearance in keeping with the striking modern type of architecture specified for all buildings in the exposition.

The building is in the shape of a rectangle, with the front corners broadly rounded. It is 464 feet long by 306 feet deep. It lies between Lake Michigan and Lief Erikson Drive at the foot of 31st Street. One thousand, one hundred pilings were driven into the "made land" of the exposition grounds to provide a safe foundation for the mass of steel, concrete, glass and armor ply. Nearly one thousand tons of steel were used in the framework. The outer walls are almost completely glass. The semi-circular front consists of the fantastically pyloned entrance and eight plate glass bays. Each bay is 48 feet long.

One of the unusual features of the construction is the roof support of the assembly plant room. The steel and glass ceiling is supported by sixteen 90-foot steel arches which are welded instead of bolted. A balcony 12 feet wide encircles the room. The room has more of the appearance of a big gymnasium than of a factory. The room is 420 feet long and 90 feet wide.

There are six other principal rooms in the building. These include the Entrance Salon, 118 feet long by 55 feet wide and 50 feet high; two automobile display rooms on either side of the entrance, each containing 18,000 square feet of floor space; an accessory and a truck display room, each 232 feet long by 60 feet wide, and the Little Theater, which will seat 235 persons.

The exhibits will portray General Motors' twenty-five years of contribution to the progress of the United States in industry, science and art. Products of the numerous automotive, household appliance, farm and other machinery manufacturing units among the seventy-five companies that make up General Motors in this and other countries will be represented. The art objects which will be displayed in the Entrance Salon and elsewhere in the building will depict or typify modern methods of manufacture or interpret their social significance.

Daring use of color is being made in the exterior decoration, the scheme being gray, bright orange, red, blue and silver. The colors are in harmony with the scheme for the transportation group, of which the building is a member, worked out by Joseph Urban. By night the startling effect will be heightened by lavish use of changing colored flood lights and powerful neon tubes, arranged to give an appearance of irridescence.

Artists of international note are doing sculpture and painting for the building.

DODGE SALES GAIN IN WEEK OF APRIL 8

(Continued from Page 1)

nevertheless significant, because it emphasizes a twenty-week period registering continuous and progressive rises in nineteen weeks, the only week showing a slight setback of 5 per cent. being that of the nation-wide bank holiday."

Of additional interest in Mr. vanDerZee's weekly statement is the information that the week of April 1 is the largest week for Dodge passenger car deliveries since June 17, 1931, while over-all deliveries of Dodge and Plymouth passenger cars and Dodge trucks to date this year are 27.1 per cent. ahead of deliveries made during the corresponding period of 1932.

Dealers' orders are coming in at a very satisfactory rate, according to Mr. vanDerZee, indicating prospects of a satisfactory spring business. Activities in the Dodge truck division are, to a considerable extent, represented by orders, many of them for brewery units, awaiting special bodies now in the course of production.

Problem of Distribution by Brewing Industry

By E. A. MENHALL
Vice-President, Highway Trailer Company, Edgerton, Wis.

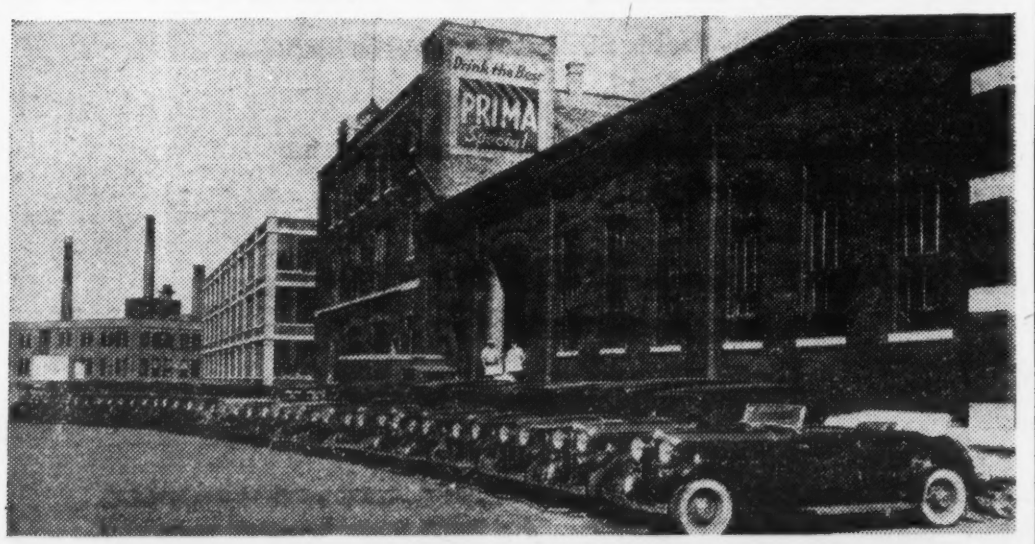
The brewing industry in the distribution of their products will be confronted with the same road law restrictions as the milk industry, the packing industry and other vocations.

The Highway Trailer Company of Edgerton, Wis., has been able to solve the question of 40-foot length limitation for vehicle trains in Indiana and Illinois, by the development of a special type of compact vehicle design which will conveniently provide loading space adequate to meet maximum weight, carrying capacity, under the permissible gross weight and axle load limits governing truck and trailer combination. This has been accomplished with special application to bulk load carriers in the dairy industry as well as bottled goods, and it is believed that the brewery industry will have the same problems of distribution in both bottled goods and bulk.

In some cases, length and weight restrictions in various states are exempt in the larger cities, therefore the Highway Trailer Company was able to solve this problem by the development of a flexible train of truck and two trailers. Both trailers are of the semi type and the rear one is connected up by means of a dolly. This combination makes it possible to quickly separate the two trailers for distribution outside of the city limits, while within the city limits both trailers are used with one power unit. Each trailer carries 312 cases of milk or its equivalent in pints and half pints, the length and width of the trailer provided for fifty-two cases per row, the quarts being piled six high. The bodies are of light alloys both interior and exterior, panels having doors at both ends and on each side, and are insulated throughout with a new development of Dry-Zero blanket, which insures the safety of the product from extreme temperatures.

Every precaution for safety has been taken into consideration. There are no extensions in the way of hardware on sides beyond the width of the rub rail. Flexible coil springs connect the trailers and saw tooth sections on the top of the drawbar tongue safeguard against the possibility of serious injury to school children or hitch hikers attempting to ride without the knowledge of the driver. In addition a full complement of stop and clearance lights are effectively and attractively located. These trailers are fully automatic with full cab control including the operation of the power brakes on the trailers.

One is impressed with the complete elimination of door fittings and protruding hardware, usually visible in refrigerator equipment of this type. The graceful lines of the skirting serve to impart an air of distinction quite in contrast with the box-like appearance generally found in trailers of this length. Rounded corners which match with rounded roof sections entirely eliminate any tendency towards square effects. The entire equipment stands out as a conspicuous example of the most modern sanitary and efficient vehicle unit for the distribution of one of our most important food products and it is believed that the brewing industry will be interested in distributing its product in similar equipment, which will reflect cleanliness to the public and place it on a par with the attractive methods now being used by the dairy industry in advertising its products.



NASH FLYERS for Prima salesmen lined up in front of the Prima brewery in Chicago

BIG BANK HOLIDAY BUSINESS RESULT OF FOLLOW-UPS

(Continued from Page 3)

phone. After ten days, if he has not been heard from, a personal call is made by a representative of the Garfield Motors.

Newspaper advertising is used on Fridays and Sundays for the sale of used cars. The classified section is used for presenting the cheaper models, and display advertising is used for advertising the higher priced used cars. Direct mail advertising is used in contacting new car prospects and for service work, while flyers are also distributed every thirty days. Approximately 1,000 of these are distributed about the community.

The agency gives considerable credit to the General Motors sales managers' course, which it is following to the dot, for its good showing. At present the company is re-equipping its shop and has added a brake machine, two factory trained mechanics and a service manager, and is going to make a strong bid for increased service business. The company's showrooms have a frontage of fifty-four feet on one of the city's main traffic arteries, which in itself has been an asset in securing business. The combined showroom and garage measures 160 feet in depth, and the company also operates a used car lot several blocks from the showroom, on the same thoroughfare.

The new sales force which has checked up this splendid record under the direction of Mr. Lorch and Mr. Hermes consists of Norman Brussock, Emil Gehring, H. W. Lorch and R. G. Gauerke, with Matt Baird in charge of the firm's used car department. The practice of maintaining the proper spirit within the organization and keeping constantly in touch with patrons with the assistance of an alphabetical owners follow-up system, coupled with intelligent advertising, has assisted the Garfield Motors, Inc., in surpassing old sales records during a period ordinarily considered as unfavorable.

TRANSUE & WILLIAMS

New York, April 14.—Transue & Williams Steel Forging shows for the quarter ended March 31 net loss of $49,790 after taxes, depreciation, etc., comparing with net loss of $3,398 in the first quarter of 1932.

Mack Has 4 Types Suitable For Beer Hauling

Mack transportation vehicles, suitable for beer hauling, include trucks, tractors, trailers and semi-trailers.

They line up as follows:

For light-capacity, fast delivery of cases in retail distribution, Mack offers the Models BL and BG, with six-cylinder engines developing, respectively, 56 brake horsepower at governed speed of 2,300 r. p. m.; and 69 brake horsepower at governed speed of 2,300 r. p. m. Both of these trucks employ spiral-bevel, single reduction final drive, and have standard wheelbase lengths of 138 inches or 156 inches. BL and BG tractor models have a 148-inch standard wheelbase.

For medium capacity case or keg delivery, the Models AB, BF and BM are available. The AB, offered with either chain or dual reduction drive, der engine; chain or dual reduction drive with the four, dual reduction drive only on the six. The former engine develops 71 brake horsepower at governed speed of 1,400 r. p. m.; the latter, 127 brake horsepower at governed speed of 2,050 r. p. m. These two models are also available as six-wheelers, with either two or four rear-wheel drive. Tractor wheelbase lengths are 128 inches on the AC-4, 151 inches for AC-6, 134 inches for AK-4 chain drive, 143 inches for AK-4 dual-reduction drive, 155 inches for AK-6.

Sub-trailers, with either two or four wheels, in all capacity ranges to efficiently harmonize with Mack tractors, are also designed and built by Mack, as are full trailers of either reversible or non-reversible types. Mack is also prepared to build special bodies to meet every phase of the brewer's hauling requirements.

has standard wheelbase lengths of 146½ and 164½ inches, and is powered by a four-cylinder engine, developing 60 brake horsepower at governed speed of 1,800 r. p. m. The BF has a six-cylinder engine, 69 horsepower at governed speed of 2,300 r. p. m.; dual reduction final drive and standard wheelbase lengths of 156 or 180 inches. The BM, largest of the medium capacity Macks, has a six-cylinder powerplant, the 93 brake horsepower of which is secured at governed engine speed of 2,250 r. p. m.; dual reduction drive and 157-inch and 175-inch standard wheelbase lengths. Both of these latter models are characterized by set-back front axles which assure better load distribution and easier maneuvering. Tractor wheelbase lengths are 146½-inch for the AB; 138-inch for both the BF and BM.

Of the heavy-duty Mack models, the Models BX and BQ are admirably fitted for bulk hauling over long distances, particularly where capacity pay loads must be expedited to outlying surburban points. The six-cylinder engine of the BX produces 104 brake horsepower at governed speed of 2,250 r. p. m.; that of the BQ, 127 brake horsepower at governed speed of 2,050 r. p. m. The BX is offered with either chain or dual reduction drive; the BQ with dual-reduction drive only. Standard wheelbase lengths on the BX are 171 or 189 inches; on the BQ, 191 or 209 inches. These two models may also be had as six-wheelers, with either two or four rear-wheel drive. Tractor wheelbase lengths are 136 inches on the BX; 141 inches on the BQ.

Rounding out the line of Mack trucks ready to haul their share of the foamy, amber fluid are the two heavy-duty Bulldog models, the AC and AK. The former is offered with chain drive, and either a four-cylinder engine developing 71 brake horsepower at governed speed of 1,400 r. p. m.; or asix, producing 127 brake horsepower at governed speed of 2,050 r. p. m. The AK is procurable with either a four or six cylin-

N. A. C. C. BULLETIN WARNING AGAINST SHACKLING TRUCKS

New York, April 14.—The following bulletin has been sent to motor truck associations by the Motor Truck Division of the National Automobile Chamber of Commerce:

"That nation-wide public sentiment has crystallized in criticism of any plan for motor truck regulation to 'equalize competition' with railroads is further indicated in the stand taken by the traffic committee of the American Newspaper Publishers Association last week and a resolution adopted by the American National Live Stock Association at its convention early this year.

"Last week the American Farm Bureau Federation, National Grange and the National Farmers Union made a public statement to the effect that no taxation or regulation should be permitted which has for its purpose any increase in cost or restriction in use in order to equalize competition between motor transportation and other forms of transportation.' The objections raised to such regulation conform with the views of the National Transportation Committee.

"The Publishers Association traffic committee objects to applying the railroad type of regulation to motor trucks because such regulation 'would effectively stifle this form of transportation.' The committee offers several suggestions for the solution to the railroad problem.

"The American National Live Stock Association criticises the 'unwarranted attacks made on the motor vehicle' and urges 'Congress and the legislatures of the various states not to adopt laws to govern motor vehicles which have for their purpose elimination of competition with the railroads."

NEW TRUCK RIM AID TO BREWERY TRANSPORTATION

Breweries that have already adopted the new Firestone rim, known as the "RI," some of them through changeovers from solid o pneumatic tire equipment, report that it furnishes an ideal method for carrying heavy loads on light vehicles with safety, silence and low cost.

This new Firestone rim is made in five, six and seven-inch sizes, and consists of only two continuous pieces. It is simple in design, easy to operate and has no split members. Localized deflection, common to rims with a split member, is eliminated. Through the rigid support which the continuous base and the continuous side ring give the entire circumference of the tire bead, the new Firestone design minimizes bead failures, insures increased tire mileage and makes possible high-speed truck transportation.

No special tools are required to operate the Firestone RI rim. A screwdriver or tire iron is all that is needed to remove the continuous ring. The ring seats automatically while the tire is being inflated, and insures positive locking. The tire is sealed against moisture and water lodging on the rim base, while the rigid construction provides maximum strength and lighter weight.

This new rim supersedes and interchanges with the Firestone DTI rim, and also interchanges with the Firestone type R rim in the larger sizes.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

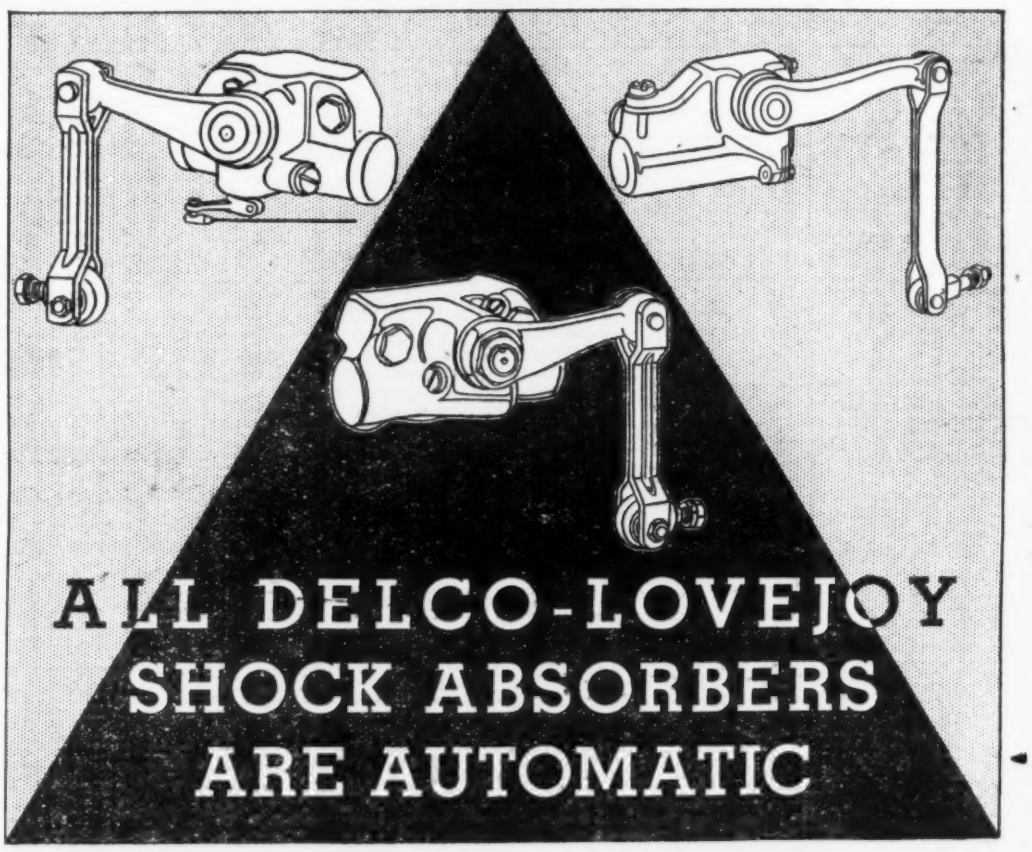
CHRYSLER BELIEVES NEW MODELS WILL REVIVE BUYING

(Continued from Page 7)

ly offering—when buyers realize how much more they can get out of money that's working—we are going to see this country on its feet once more.

"People have asked me about the advisability of introducing a new car at this time. My answer is:

"As long as there are cars on the highways that are a positive menace, not only to the people who ride in them but to the public safety; as long as there are other cars chugging along that are costing their owners more to operate than a new Plymouth, as long as there are still automobiles that are getting even too thread-bare and old-fashioned looking for people who are proud of the fact that they are wearing last year's overcoat, and as long as most Americans continue to want the good things and the practical things of life—and automobiles are an every-day necessity—there will always be a sizable market for desirable motor cars."



ALL DELCO-LOVEJOY SHOCK ABSORBERS ARE AUTOMATIC

Whichever type of Delco-Lovejoy shock absorber you use, you are assured automatic performance that has met the test of time. The basic Lovejoy design provides an unfailing relief valve that obviates overloading, and compensates fully for sudden thrusts and temperature variations. All Delco-Lovejoys—single-acting and Duodraulics, with or without Ride Regulating Control or Inertia Control—have this exclusive feature which has helped to make Delco-Lovejoys the most popular shock absorbers in use today.

DELCO PRODUCTS CORPORATION, DAYTON, OHIO

DELCO-LOVEJOY

HYDRAULIC SHOCK ABSORBERS

Major Specifications and Mechanical Details of 1933 Commercial Cars

LEADING MAKES NATIONALLY DISTRIBUTED

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brake Lining	Standard Wheelbase	Chassis Wgt.	Standard Tire Sizes Front	Rear
Austin	400	225	Own	L	4	2.2x3	45.6	7.8	13@3200	G	Hex	Rock	Spic	Own	Til	Gra	Aut	W-G	3	Sal	Sp	5.25	O4M	76.5	75	——	18x3.75	18x3.75
Autocar R	1½	2250	Own	L	6	3¼x4¾	314.0	33.7	75@2400	G	G & O	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Own	Sp	33.5	LO4IHM	380	159	5370	20x7.00	20x7.00D
Autocar RE	2	2300	Own	L	6	3¼x4¾	314.0	33.7	75@2400	G	G & O	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Own	Sp	33.5	LO4IHM	380	159	5400	20x7.50	20x7.50D
Autocar RF	2	2450	Own	L	6	3¼x4¾	314.0	33.7	75@2400	G	G & O	Br-L	Spic	Ross	Str	P	DR	Own	4	Own	Sp	33.0	LO4IHM	380	159	5630	20x8.25	20x8.25D
Autocar RG	2½	2600	Own	L	6	3¼x4¾	314.0	33.7	75@2400	G	G & O	Br-L	Spic	Ross	Str	P	DR	Own	4	Own	2R	39.3	LO4IHM	460	159	5880	34x7	34x7D
Autocar A	2½	3000	Own	L	6	4 x4¾	358.0	38.4	84@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	Sp	33.0	LO4IV	460	150	6350	20x8.25	20x8.25D
Autocar D	3	3500	Own	L	6	4 x4¾	358.0	38.4	84@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	Sp	39.3	LO4IV	460	150	6375	34x7	34xTD
Autocar DE	3½	3850	Own	L	6	4 x4¾	358.0	38.4	84@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	40.7	LO4IV	519	150	6890	20x9.00	20x9.00D
Autocar DF	3½	3950	Own	L	6	4 x4¾	358.0	38.4	84@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	40.7	LO4IV	519	150	7220	20x9.00	20x9.00D
Autocar DH	4	4150	Own	L	6	4 x4¾	358.0	38.4	84@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	54.3	LO4IV	519	150	7450	36x8	36x8D
Autocar N	4	4600	Own	L	6	4¼x4¾	404.0	43.4	94@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	45.6	LO4IV	519	191½	7990	20x9.75	20x9.75D
Autocar NE	5	4725	Own	L	6	4¼x4¾	404.0	43.4	94@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	5	Own	2R	50.1	LO4IV	519	149	8300	22x9.75	22x9.75D
Autocar NF	5	4825	Own	L	6	4¼x4¾	404.0	43.4	94@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	5	Own	2R	42.1	LO4IV	519	191½	8350	22x9.75	22x9.75D
Autocar NH	5	4925	Own	L	6	4¼x4¾	404.0	43.4	94@2500	G	G & O	Long	Spic	Ross	Str	P	DR	Own	5	Own	2R	50.1	LO4IV	519	149	8350	22x9.75	22x9.75D
Autocar S	5	5500	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	54.0	LO4IV	544	158	8700	22x9.75	22x9.75D
Autocar SE	6	5800	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	54.0	LO4IV	544	158	8850	22x10.50	22x10.50D
Autocar CE	7½	6000	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Own	4	Own	2R	54.3	O2IM	502	176	10100	36x7S	40x14S
Autocar C	7½	6600	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Br-L	12	Wis	2R	120.5	LO4IV	664	158	10950	24x10.50	24x10.50D
Autocar CBS	7½	6600	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	LN	Own	4	Own	2R	44.1	BO4IM	596	203	10410	20x10.50	20x10.50D
Autocar CF	7½	6900	Wak	L	6	5 x5¾	677.0	60.0	126@1800	G	Own	Br-L	Spic	Ross	Str	P	DR	Br-L	12	Wis	2R	120.5	LO4IV	664	164	11280	24x10.50	24x10.50D
Autocar T	7½	6000	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Own	12	Own	2R	88.5	O4IA	544	192	9700	22x10.50	22x10.50D
Autocar TE	8½	6500	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Br-L	12	Own	2R	87.6	O4IA	660	192	10700	24x10.50	24x10.50D
Autocar TF	8½	6800	Wak	L	6	5 x5¾	677.0	60.0	126@1800	G	G & O	Br-L	Spic	Ross	Str	P	DR	Br-L	12	Own	2R	87.6	O4IA	660	195	10950	24x10.50	24x10.50D
*Autocar FE	20	9500	Ste	L	6	5¼x6	780.0	66.2	156@1800	G	G & O	Br-L	Spic	Ross	Zen	P	NE	Br-L	12	Wis	2R	96.0	T4IA	664	180	12300	24x10.50	24x10.50D
**Autocar 6GE	15	11000	Ste	L	6	5¼x6	780.0	66.2	156@1800	G	G & O	Br-L	Spic	Ross	Zen	P	NE	Br-L	12	Tim	Wo	99.6	T6IA	718	198	16300	22x9.75	22x9.75D
***Autocar HS	3½	4600	Own	L	4	4½x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2R	54.3	O2IM	516	114	7600	40x8	40x8D
***Autocar SHS	3½	4800	Own	L	6	4¼x4¾	404.0	43.4	94@2500	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2R	54.3	O2IM	516	114	7900	40x8	40x8D
Brockway 89 C	*10500	1185	Con	L	6	3⅜x4	214.3	27.3	79@3200	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Tim	Sp	36.2	CB4IM	248	149	4075	20x6.50	20x6.50D
Brockway 90 C	*12500	1485	Con	L	6	3⅜x4⅝	248.2	27.3	70@3200	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Tim	Sp	37.4	L4IH	353	149	4355	20x7.00	20x7.00D
Brockway 100 C	*15000	1800	Con	L	6	3⅜x4⅝	248.2	27.3	80@3200	C	G & O	Borg	Spic	Ross	Zen	P	Aut	—	4	Tim	Sp	46.0	L4IH	353	168	4450	20x7.50	20x7.50D
Brockway 120 C	*15000	2090	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Tim	Sp	38.5	L4IH	353	156	5500	20x7.50	20x7.50D
Brockway 140 C	*17500	2690	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	43.5	L4IHV	386	156	6100	20x8.25	20x8.25D
Brockway 141 C	*19500	3175	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	46.2	L4IHV	380	170	6500	20x9.00	20x9.00D
Brockway 170 C	*19500	3450	Con	H	6	4⅛x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	46.6	L4IHV	380	170	7100	20x9.00	20x9.00D
Brockway 175 C	*24000	3850	Con	H	6	4⅜x4¾	427.5	45.9	100@2400	C	G & O	Ful	Spic	Ross	Zen	P	*Aut	Ful	5	Wis	2R	46.6	L4IHV	380	170	7200	20x9.00	20x9.00D
Brockway 195 C	*24000	4000	Con	H	6	4⅛x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	52.4	L4IHV	471	170	8100	20x9.75	20x9.75D
Brockway 220 C	*28000	4700	Con	H	6	4⅜x4¾	427.5	45.9	100@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	50.7	L4IHV	546	170	8675	20x10.50	20x10.50D
Brockway 260 C	*30000	5850	Con	H	6	4½x5¼	501.0	48.6	120@2200	C	G & O	Ful	Spic	Ross	Zen	P	*Aut	Ful	4	Wis	2R	50.7	L4IHV	546	212	9000	22x10.50	22x10.50D
Chevrolet	½	330	Own	H	6	3⅛x4	206.8	26.3	56@2750	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	13.6	O41M	101	109	1880	18x5.25	18x5.25
Chevrolet	1½	480	Own	H	6	3⅛x4	206.8	26.3	56@2750	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	O41M	—	131	2830	30x5	32x6
Chevrolet	1½	510	Own	H	6	3⅛x4	206.8	26.3	56@2750	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	O41M	170	157	2915	30x5	32x6
Diamond T 210 S F	1½	945	Her	L	6	3⅜x4¼	228.0	27.3	60@2800	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	—	L4IH	191	135½	3100	20x5.50B	20x6.50B
Diamond T 210 FF	1½	565	Her	L	6	3⅜x4¼	228.0	27.3	60@2800	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	—	L4IH	191	135½	3100	20x5.50B	20x6.50B
Diamond T 240 A	1¾	795	Her	L	6	3⅜x4¼	228.0	27.3	60@2800	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	—	L4IH	220	137	3500	20x6.50B	32x6P
Diamond T 310	2	995	Her	L	6	3⅝x4¼	263.0	31.5	68@2800	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	—	L4IH	350	155	4200	20x6.50B	20x6.50DB
Diamond T 350	2½	1295	Her	L	6	3⅜x4¼	282.0	33.7	73@2800	G	G & O	Borg	Spic	Ross	Zen	P	Aut	Cla	5	Cla	Sp	—	L4IH	350	155	4700	20x7.00B	20x7.00DB
Diamond T 410A	3	1695	Her	L	6	4 x4½	339.0	38.4	100@2800	G	G & O	Borg	Spic	Ross	Zen	P	Aut	Cov	5	Cla	Sp	—	L41HV-T	350	160¾	5400	20x7.50B	20x7.50DB
Diamond T 410B	3	2135	Her	L	6	4 x4½	339.0	38.4	100@2800	G	G & O	Cov	Spic	Ross	Zen	P	L-N	Cov	4	Cla	Sp	—	L41HV-T	350	200	6100	20x7.50B	20x7.50DB
Diamond T 501 A	3	2650	Her	L	6	4 x4½	339.0	38.4	100@2800	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Wis	2 R	—	L41HV-T	410	176½	6400	20x8.25B	20x8.25DB
Diamond T 506 A	3	2950	Her	L	6	4¼x4½	383.0	43.3	91@2200	G	G & O	Cov	Spic	Ross	Zen	P	L-N	Cov	5	Wis	2 R	—	L41HV-T	410	184	6400	20x8.25B	20x8.25DB
Diamond T 603	3-4	3395	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	—	L41HV-T	499	169	7500	20x9.00B	20x9.00DB
Diamond T 606 B	3-4	3695	Her	L	6	4½x5¼	501.0	48.6	111@2200	G	G & O	Cov	Spic	Ross	Zen	P	L-N	Cov	5	Wis	2 R	—	L41HV-T	499	187½	7500	20x9.00B	20x9.00DB
Diamond T 510	4	1995	Her	L	6	4 x4½	339.0	38.4	100@2800	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Tim	Sp	—	L41HV-T	408	168	6000	20x7.00B	20x8.25DB
*Diamond T 801	4	4140	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Br-L	7	Own	Wo	—	L61HV-T	571	189½	8300	36x8P	36x8P
Diamond T 750	4-5	4925	Her	L	6	4⅜x5¼	529.0	51.4	114@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	—	W41A-T	552	178	9300	22x9.75B	22x9.75DB
*Diamond T 1201	6	5600	Her	L	6	4½x5¼	501.0	48.6	111@2200	G	G & O	Cov	SpicBlo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	—	W41A-T	238	190	11000	34x7P	34x7DP
*Diamond T 1602	8	6400	Her	L	6	4⅜x5¼	529.0	51.4	114@2200	G	G & O	Cov	SpicBlo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	—	W41A-T	238	190	11700	36x8P	36x8DP
*Diamond T 1603	8	7500	Wak	L	6	5 x5¾	677.4	60.0	127@2200	G	G & O	Br-L	SpicBlo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	—	W41A-T	238	194	12500	36x8P	36x8DP
Dodge Bros. UF 10	½	375	Own	L	4	3⅜x4¾	196.0	21.0	48@2800	G	Fed	Borg	Un	Own	Car	P	DR	Own	3	Own	Sp	12.8	O41H	121	109	1925	19x5.00	19x5.00
Dodge Bros. F 10	½	445	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Un	Own	Car	P	DR	Own	3	Own	Sp	12.8	O41H	121	109	1975	19x5.25	19x5.25
Dodge Bros. G 20	¾-1	597	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O41H	175.8	131	2520	17x7.50	17x7.50
Dodge Bros. G 21	¾-1	622	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O41H	175.8	157	2670	17x7.50	17x7.50
Dodge Bros. UG 20	¾-1	537	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O41H	175.8	131	2450	17x7.50	17x7.50
Dodge Bros. UG 21	¾-1	562	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O41H	175.8	157	2600	17x7.50	17x7.50
Dodge Bros. HC	—	340	Own	L	6	3⅛x4⅛	189.8	23.4	70@3600	G	—	Borg	Own	Own	B&B	—	DR	Own	3	Own	Sp	12.2	41H	106.1	111¼	1775	17x5.25	17x5.25
Dodge Bros G 22	¾-1	759	Own	L	6	3¼x4¾	217.7	25.3	—	G	—	—	—	—	—	—	—	—	—	—	—	—	—	—	136	3080	—	—
Dodge Bros. UG 30	1½	525	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O41H	176	131	2490	20x6.00	32x6
Dodge Bros. UG 31	1½	550	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O41H	176	157	2640	20x6.00	32x6
Dodge Bros. G 30	1½	585	Own	L	6	3⅛x4⅜	201.3	23.5	60@3100	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O41H	176	131	2560	20x6.00	32x6
Dodge Bros. G 31	1½	610	Own	L	6	3⅛x4⅜	201.3	23.5	60@3100	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O41H	176	157	2710	20x6.00	32x6
†Dodge Bros. UGS 50	1½	875	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O61HV	273	153	3575	20x6.00	32x6S
†Dodge Bros. GS 50	1½	935	Own	L	6	3¼x4¼	211.5	25.3	60@3100	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O61HV	273	153	3650	20x6.00	32x6S
Dodge Bros. F 36	1½	1485	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	O41H	305	165	3972	20x6.00	20x6.00D
Dodge Bros. G 43	2	795	Own	L	6	3¼x4⅜	217.7	25.3	73@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	5	Own	Sp	50.0	O41H	229	136	3345	20x7.00	20x7.00D
Dodge Bros. G 44	2	825	Own	L	6	3¼x4⅜	217.7	25.3	73@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	5	Own	Sp	50.0	O41H	229	165	3470	20x7.00	20x7.00D
*Dodge Bros. F 40	2	1995	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	O41H	350	150	5173	20x6.50	20x6.50D
*Dodge Bros. F 41	2	2085	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	O41H	350	165	5211	20x6.50	20x6.50D
*Dodge Bros. F 42	2	2180	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	O41H	350	190	5311	20x6.50	20x6.50D
†Dodge Bros. GS 55	2	1260	Own	L	6	3¼x4⅜	217.7	25.3	73@3200	C	Fed	Borg	Cle	Own	Car	P	NE	Own	4	Own	Sp	50.0	O61HV	365	158	4450	20x7.00	20x7.00D
Dodge Bros. F 60	3	2645	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	2 R	56.0	O41H	416	146	5543	32x6	32x6D
*Dodge Bros. F 61	3	2575	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.8	O41H	416	170	5789	32x6	32x6D
*Dodge Bros. F 62	3	2695	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48.8	O41H	416	195	5901	32x6	32x6D
Dodge Bros FS 75	3	3995	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	—	Borg	Own	Own	DL	—	DR	Own	4	Own	Sp	48.8	41H-V	657.1	221	8350	20x9.00	20x9.00
Dodge Bros. G 80	4	5250	Own	L	8	3½x5	384.8	39.2	115@3000	G	Long	Borg	Cle	Sag	Str	P	DR	Own	5	Own	Sp	62.7	B41A-T	650	146	7840	20x9.75	20x9.75D
Dodge Bros. G 81	4	5285	Own	L	8	3½x5	384.8	39.2	115@3000	G	Long	Borg	Cle	Sag	Str	P	DR	Own	5	Own	Sp	69.6	B41A-T	650	170	7840	20x9.75	20x9.75D
Dodge Bros. G 82	4	5350	Own	L	8	3½x5	384.8	39.2	115@3000	G	Long	Borg	Cle	Sag	Str	P	DR	Own	5	Own	Sp	69.6	B41A-T	650	195	8040	20x9.75	20x9.75D
Dodge Bros. G 83	4	5415	Own	L	8	3½x5	384.8	39.2	115@3000	G	Long	Borg	Cle	Sag	Str	P	DR	Own	5	Own	Sp	69.6	B41A-T	650	220	8400	20x9.75	20x9.75D
Essex Ter. 6	——	330	Own	L	6	2½x4¾	193.0	20.7	70@3200	—	—	—	—	—	——	—	P	—	Own	3	Own	—	—	4M	—	106	——	17x5.25	17x5.25
Federal D 3	*1½	670	Con	L	4	3⅞x4¼	200.5	24.0	50@2700	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L4IH	191	130	3225	20x6.00	32x6
Federal E 3	*1½	695	Con	L	6	3⅜x4	215.0	27.3	72@3400	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L4IH	191	130	3225	20x6.00	32x6
Federal F 7	*1⅞	1325	Con	L	6	3⅜x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Gem	Zen	P	DR	Own	4	Tim	Sp	29.2	L4IH	247	132	3765	30x5	30x5D
Federal F 8	*2	1425	Con	L	6	3⅜x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Gem	Zen	P	DR	Own	4	Tim	Sp	34.0	L4IH	269	132	3865	30x5	30x5D
Federal G 5	2	995	Con	L	6	3⅜x4	215.0	27.0	72@3400	C	Long	Borg	Cle	Gem	Zen	P	DR	Own	4	Own	Sp	34.0	L4IH	269	132	3800	20x6.50B	20x6.50DB
Federal A 6	*2	1895	Con	L	6	3⅜x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Cla	Sp	38.5	L4IH	270	151	4580	32x6	32x3D
Federal A 6 T	*2½	1995	Con	L	6	3⅜x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	47.1	L4IHV	379	151	5110	32x6	32x6D
Federal A 6 T W	*2½	2130	Con	L	6	3⅜x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	52.9	L4IHV	379	151	5110	32x6	32x6D
Federal T 3 W	*2½	1595	Wak	L	4	4 x5	251.0	25.6	50@2000	G	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Wo	36.3	L4IH	337	148	5110	32x6	36x8
Federal A 600	*2½-3	1745	Con	L	6	3⅛x4½	288.3	32.6	73@2600	C	Long	Borg	Cle	Ross	Zen	Vac	DR	Own	4	Cla	Sp	41.5	L4IH	270	157	5050	20x7.50	20x7.50D
Federal T 3 W F A	*2½-3	1795	Wak	L	4	4 x5	251.0	25.6	50@2000	G	Long	Borg	Cle	Ross	Zen	Vac	DR	Own	4	Tim	Wo	43.9	L4IHV	379	148	5400	32x6	32x6D
†Federal D 28 W	*3	1050	Con	L	4	3⅞x4¼	200.5	24.0	50@2700	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	312	140	3925	20x6.00	32x6
†Federal E 2 S W	*3	1150	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	312	145	3975	20x6.00	32x6
Federal D 2 D	*3	1350	Con	L	4	3⅞x4¼	200.5	24.0	50@2700	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	312	140	4235	20x6.00	32x6
Federal E 2 D	*3	1450	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	312	145	4310	20x6.00	32x6
Federal A 600 T	*3-3½	2045	Con	L	6	3⅛x4½	288.3	32.6	73@2600	C	Long	Borg	Cle	Ross	Zen	P	DR	Own	4	Tim	Sp	50.7	L4IHV	379	157	6100	20x8.25	20x8.25D
Federal A 600 T W	*3-3½	2180	Con	L	6	3⅛x4½	288.3	32.6	73@2600	C	Long	Borg	Cle	Ross	Zen	P	DR	Own	4	Tim	Wo	48.8	L4IHV	379	157	6100	20x8.25	20x8.25D
Federal A 600 T D R	*3-3½	2180	Con	L	6	3⅛x4½	288.3	32.6	73@2600	C	Long	Borg	Cle	Ross	Zen	P	DR	Own	4	Tim	2R	51.0	L4IHV	379	157	6100	20x8.25	20x8.25D
Federal T 10 B	*3½-4	2550	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	44.5	L4IHV	379	165	6550	34x7	34x7D
Federal T 10 W	*3½-4	2685	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Wo	44.0	L4IHV	379	165	6550	34x7	34x7D
Federal T 10 D R	*3½-4	2685	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	2R	45.6	L4IHV	379	165	6550	34x7	34x7D
†Federal A 6 S W	*4	2195	Con	L	6	3⅜x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Cla	Sp	38.5	L6IHV	465	164	5620	32x6	32x6D
Federal U 6	*4½-5	3800	Con	H	6	4⅛x4¾	381.0	40.8	85@2200	C	Long	Borg	Spic	Ross	Zen	P	DR	Cla	5	Tim	Wo	50.4	L4IHV	465	165	7420	36x8	36x8D
Federal U 6 D R	*4½-5	3860	Con	H	6	4⅛x4¾	381.0	40.8	85@2200	C	Long	Borg	Spic	Ross	Zen	P	DR	Cla	5	Tim	2R	47.6	L4IHV	465	165	7420

Major Specifications and Mechanical Details of 1933 Commercial Cars

LEADING MAKES NATIONALLY DISTRIBUTED

(Continued from Page 12)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brake Lining	Standard Wheelbase	Chassis Wgt.	Tire Sizes Standard Front	Tire Sizes Standard Rear
Gramm C X 6	2	1295	Con	L	6	3⅜x4⅝	248.2	27.3	70@3000	C	Per	Own	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	4150	20x6.50	20x6.50D
Gramm C	2	1795	Lyc	L	6	3⅝x4½	278.6	31.5	82@2600	G	Per	Own	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	31.0	L4IH	353	131	4800	20x7.00	20x7.00D
Gramm C F	2½	1895	Lyc	L	6	3⅜x4½	299.0	33.7	85@2800	G	Per	Br-L	Blo	Ross	Til	P	Aut	Br-L	4	Tim	Sp	38.2	L4IH	353	160	4900	20x7.50	20x7.50D
Gramm D	2½	1995	Lyc	L	6	3⅜x4½	299.0	33.7	90@2200	G	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	33.0	L4IHV	339	160	5200	20x7.50	20x7.50D
Gramm CXH	2-3	1345	Her	L	6	3⅜x4¼	262.0	33.7	73@3000	G	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	37.0	L4IH	353	131	4300	20x6.50	20x6.50D
Gramm E	3	2595	Lyc	L	6	3⅞x5	353.8	36.0	90@2200	G	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	35.0	L4IHV	374	160	5950	20x8.25	20x8.25D
Gramm E Y	3	3595	Con	H	6	4⅛x4¾	380.8	40.8	90@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	39.0	L4IHA	—	190	7200	20x7.50	20x7.50D
Gramm EX	3-4	2295	Con	L	6	3⅞x4½	316.0	36.0	80@2700	—	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	35.6	L4IHV	339	160	5200	20x8.25	20x8.25D
Gramm ED	3-4½	3995	Cum-D	H	4	4¼x6	448.0	38.0	85@1800	G	Per	Br-L	Blo	Ross	Zen	P	L-N	Br-L	4	Tim	Sp	39.0	L4IHV	374	160	5600	20x8.25	20x8.25D
Gramm G	4	3695	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	C	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Wis	2R	49.5	L4IHV	768	165	8200	20x9.00	20x9.00D
Gramm G S	4	3695	Lyc	L	8	3⅜x4¾	419.6	44.4	130@2700	G	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Wis	2R	—	L4IHV	768	165	8200	20x9.00	20x9.00D
Gramm G Y	4	4345	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Wis	2R	28.0	BW4IM	736	210	7700	20x8.25	20x8.25D
Gramm G W	5	5175	Con	H	6	4⅜x4¾	428.0	45.9	100@2200	C	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Wis	2R	—	4IA	364	157	9500	20x9.00	20x9.00D
Gramm GWD	5	6495	Cum-D	H	6	4⅞x6	672.0	57.0	125@1800	G	Per	Br-L	Blo	Ross	——	P	L-N	Bl	4	Wis	2R	25.5	4IA	864	157	9600	20x9.00	20x9.00D
Gramm H Y	5	6545	Con	L	6	4⅝x5¾	611.4	54.1	127@2300	G	Per	Ful	Blo	Ross	Zen	P	Aut	Ful	4	Wis	2R	25.2	4IA	996	236	10100	20x9.00	20x9.00D
Indiana 85	1½	885	Her	L	6	3⅝x4¼	263.0	31.5	68@2800	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	35.1	L4IH	249	141	3900	20x6.50	20x6.50D
Indiana 85 DR	1½	1190	Her	L	6	3⅝x4¼	263.0	31.5	68@2800	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	5	Wis	2R	40.1	L4IH	316	141	4200	20x6.50	20x6.50D
Indiana 95	2	1095	Her	L	6	3⅜x4¼	282.0	33.7	73@2800	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	36.2	L4IH	353	141	4400	32x6	32x6DP
Indiana 95 DR	2½	1275	Her	L	6	3⅜x4¼	282.0	33.7	73@2800	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	41.2	L4IH	353	141	4650	20x7.50	20x7.50DB
Indiana 17	2½	2450	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	37.8	L4IHV	398	170	7000	20x8.25	20x8.25D
Indiana 106 DR	2½	1850	Her	L	6	4 x4½	339.0	38.4	76@2400	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	40.3	L4IHV	353	156	6000	20x7.50	20x7.50D
*Indiana 95 SBT 151	3	1675	Her	L	6	3⅜x4¼	282.0	33.7	73@2800	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	45.8	L6HIV	559	168	6500	32x6	32x6DP
*Indiana 95 SW 75	3	1735	Her	L	6	3⅜x4¼	282.0	33.7	73@2800	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	45.8	L6HIV	459	186	6200	32x6	32x6DP
Indiana 17 DR	3	2675	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	38.6	L4IHV	398	170	7300	20x8.25	20x8.25D
Indiana 106 SW 151	3	2675	Her	L	6	4 x4½	339.0	38.4	76@2400	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	42.6	L6HIV	559	188	7500	32x6.00P	32x6DP
Indiana 19 DR	3½	3400	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	52.3	L4IHV	489	170	8100	20x9.00	20x9.00D
Indiana 17 SBT 251	4	3250	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	37.8	L6HIV	625	188	8200	34x7	34x7D
*Indiana 17 SW 251	4	3475	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	38.1	L6HIV	625	188	8500	34x7	34x7D
Indiana 43 DR	4	4300	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	50.7	L4IHV	546	170	8500	20x9.75	20x9.75D
Indiana 45 DR	5	4800	Her	L	6	4⅝x5¼	529.0	51.3	115@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	45.4	L4IHV	546	170	8700	20x9.75	20x9.75D
Indiana 4T DR	5-7	——	Own	H	6	4⅞x6	672.0	—	125@1800	G	Yo	Br-L	Spic	Ross	——	P	L-N	Br-L	5	Wis	2R	45.4	W4IA	560	170	10500	20x10.50	20x10.50D
International D 1	½	360	Own	L	6	3⅛x4⅛	213.3	26.3	70@3400	G	Moc	Own	Spic	Own	Til	P	Aut	Own	3	Own	Sp	12.8	B4IM	156	113	1950	18x5.25	18x5.25
International A 1	¾	615	Wak	L	4	3⅜x4½	186.0	21.0	59@2400	G	Mod	Moc	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	B4IM	212	136	*2887	20x5.50	20x5.50
International M 2	1	850	Wak	L	4	3⅜x4½	186.0	21.0	39@2400	G	Mod	Moc	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	B4IM	217	118	3180	20x6.50	20x6.50
International A 2	1½	615	Wak	L	4	3⅜x4½	186.0	21.0	39@2400	G	Mod	Moc	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	B4IM	212	136	2935	20x6.00	20x6.00
International B 2	1½	665	Wak	L	4	3⅜x4½	186.0	21.0	39@2400	G	Mod	Moc	Mec	Ross	Zen	Vac	DR	Mec	6	Own	Sp	37.3	B4IM	212	136	2945	20x6.00	20x6.00
International A L 3	1½	1450	Lyc	L	6	3½x4½	224.0	25.3	54@2700	G	Mod	Own	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	42.9	B4IM*	295	139	4032	20x6.00	20x6.50D
International A 3	1½	795	Lyc	L	6	3½x4½	224.0	25.3	54@2700	G	Mod	Rock	Mec	Ross	Zen	P	DR	W-G	4	Own	Sp	33.8	B4IM*	287	134	3572	20x6.00	20x6.00
International A 3½	1½	970	Lyc	L	6	3½x4½	224.0	25.3	54@2700	G	Mod	Rock	Mec	Ross	Zen	P	DR	W-G	4	Own	Sp	34.9	B4IM*	302	136	3600	20x6.00	20x6.00D
International B 4	2	995	Own	H	6	3½x4	223.0	28.3	63@3200	G	Mod	Rock	Own	Ross	Zen	P	DR	Own	4	Own	Sp	36.0	B4IM	303	145	4300	20x6.50D	20x6.50D
International A 4	2	1750	Own	H	6	3⅜x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	P	DR	Own	5	Own	Sp	47.8	B4IH*	378	145	5221	32x6	32x6D
International W 1	2½	3850	Hall	H	4	4¼x5½	312.0	28.9	59@2000	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2R	60.5	BO4IM*	710	148	8300	36x8S	36x8S
International A 5	3	2350	Own	H	6	3⅜x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	P	DR	Own	5	Own	Sp	52.6	B4IM*	430	156	5895	34x7	34x7D
International A 6	3	2675	Own	H	6	3⅜x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	P	DR	Own	5	Own	Sp	62.5	B4IM*	430	156	6120	34x7	34x7D
International W 8	3½	4850	Hall	H	4	4¾x5½	390.0	36.1	69@2000	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2R	70.5	BO4IM*	794	160	10125	36x6S	40x12S
International A 7	5-7½	6200	Own	H	6	4½x5½	525.0	48.6	98@1800	G	Mod	Rock	Mec	Ross	Zen	P	DR	Own	5	Own	2R	52.3	BO4IM-T	730	160	11590	20x9.75	20x9.75D
International A 8	7½	6300	Own	H	6	5 x5½	650.0	60.0	115@1800	G	Mod	Rock	Mec	Ross	Zen	P	DR	Own	5	Own	2R	52.3	BO4IM-T	730	160	11590	20x9.75	20x9.75D
LaFrance-Republic C-2	2	1100	Lyc	L	6	3½x4½	224.0	25.3	61@2800	G	Per	Long	Spic	Ross	Zen	P	Aut	W-G	4	Tim	Sp	35.9	L4IH	287	150	3800	20x6.00	20x6.00
LaFrance-Republic D-2	2-2½	1485	Lyc	L	6	3⅜x4½	242.0	27.3	65@2800	G	Per	Long	Spic	Han	Zen	P	Aut	W-G	4	Tim	Sp	37.9	L4IH	271	162	4600	20x6.50	20x6.50
LaFrance-Republic E-2	2½-3	2005	Lyc	L	6	3⅜x4½	299.0	33.5	82@2600	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	4	Tim	Sp	47.0	L4IHV	327	162	5000	32x6	32x6
*LaFrance-Repub. F-3	3-3½	2420	Lyc	L	6	3⅜x4½	299.0	33.5	82@2600	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	4	Tim	Sp	50.6	L4IHV	367	174	5625	34x7	34x7
*LaFrance-Repub. H-4	3½-4½	3285	Lyc	L	6	3⅞x5	354.0	36.2	86@2300	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	4	Tim	2R	54.0	L4IHV	458	179	7300	20x9.75	20x9.75
*LaFrance-Repub. M-3	4½-5½	4640	Wak	L	6	4⅜x5⅛	462.0	46.0	97@2000	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	5	Tim	2R	62.5	L4IHV	468	174	8300	20x10.50	20x10.50
*LaFrance-Repub. 35-4	6½-7½	6570	Wak	L	6	4⅜x5⅛	462.0	46.0	125@2400	G	Per	Ful	Spic	Han	Zen	P	Aut	Ful	4	Tim	2R	58.2	W4IA	690	174	9250	24x10.50	24x10.50
†*LaFrance-Republ. 6	9-12	11605	Own	H	12	4 x5	754.0	76.7	240@2900	C	Own	Br-L	Blo	Ross	Zen	P	DR	Br-L	4	Tim	2R	Opt	W6IA	782	216	14900	20x10.50	20x10.50
Mack B L	*5400	2500	Own	L	6	3¼x5	248.9	25.4	61@2600	G	Owa	Own	Spic	Gem	Str	P	NE	Own	4	Tim	Sp	Opt	L4IH	302	148	4200	20x6.00B	20x6.00DB
Mack B G	*7100	3000	Own	L	6	3⅝x5	309.6	31.6	75@2500	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	Sp	Opt	O4IV	427	156	4950	32x6P	32x6DP
Mack B F	*9100	4200	Own	L	6	3⅝x5	309.6	31.6	75@2500	G	Own	Own	Spic	Han	Str	P	NE	Own	4	Own	2R	Opt	O4IV	427	156	6600	20x8.25B	20x8.25DB
Mack A B-4	*10700	4000	Own	L	4	4¼x5	283.7	28.9	63@2100	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	6450	34x7P	34x7DP
Mack A B-4	*10500	4200	Own	L	4	4¼x5	283.7	28.9	63@2100	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2R	Opt	O4IV	471	164½	6850	34x7P	34x7DP
Mack A B-6	*10700	4150	Own	L	6	3⅝x5	309.6	31.6	75@2500	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	6450	34x7P	34x7DP
Mack A B-6	*10500	4500	Own	L	6	3⅝x5	309.6	31.6	75@2500	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	2R	Opt	O4IV	471	164½	6850	34x7P	34x7DP
Mack B M	*14600	4700	Own	L	6	4 x5½	414.7	38.4	84@2400	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	2R	Opt	O4IV	427	157	7500	20x9.00B	20x9.00DB
Mack B C	*15100	5500	Own	L	6	4 x5½	414.7	38.4	94@2400	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	Ch	Opt	O4IH	590	154	8000	36x8P	36x8DP
Mack B C	*15100	5250	Own	L	6	4 x5½	414.7	38.4	94@2400	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	2R	Opt	O4IV	610	154	7850	36x8P	36x8DP
Mack B X	*12900	5750	Own	L	6	4¼x5½	468.1	43.3	105@2400	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	Ch	Opt	O4IV	619	171	8800	22x9.75B	22x9.75DB
Mack B X	*15900	5600	Own	L	6	4¼x5½	468.1	43.3	105@2400	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	2R	Opt	O4IV	619	171	8700	22x9.75B	22x9.75DB
Mack B J	*21000	6450	Own	L	6	4½x5½	525.5	48.6	125@2300	G	Own	Own	Cle	Ross	Str	P	NE	Own	4	Own	2R	Opt	O4IV	618	197	9800	22x10.50B	22x10.50DB
Mack B Q	*21600	6800	Own	L	6	4⅜x5¾	610.6	54.1	128@2300	G	Own	Own	Cle	Ross	Str	P	NE	Own	4	Own	2R	Opt	O4IV	618	191	10600	22x10.50B	22x10.50DB
Mack A K-4	*18500	5150	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O4IV	492	174	9500	36x5S	36x5DS
Mack A K-4	*18500	5250	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2R	Opt	O4IV	492	174	9400	36x5S	36x5DS
Mack A K-6	*21400	6450	Own	L	6	4⅜x5¾	610.6	54.1	128@2300	G	Own	Own	Spic	Ross	Str	P	NE	Own	4	Own	2R	Opt	O4IV	561	188	10400	22x10.50B	22x10.50DB
Mack A C-4-L	*18500	4950	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	OJXM	478	156	9100	36x5S	40x5DS
Mack A C-4-M	*21100	5500	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	OJXM	478	168	9800	36x6S	40x6DS
Mack A C-4-H	*26900	6000	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	OJXM	478	168	10150	36x7S	40x7DS
Mack A C-6	*17300	6450	Own	L	6	4⅜x5¾	610.6	54.1	128@2300	G	Own	Own	Spic	Ross	Str	P	NE	Own	4	Own	Ch	Opt	O4IV	755	186	11400	24x10.50B	24x10.50DB
Mack A P	*25700	8500	Own	L	6	5 x6	706.5	60.0	138@1900	G	Own	Own	Spic	Ross	Str	Gra	NE	Own	4	Own	Ch	Opt	O2IV	284	191	11700	36x7S	40x8IS
Mack B X 6 wheel	*21100	7950	Own	L	6	4¼x5½	468.1	43.3	105@2400	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	2R	Opt	O6IV	974	170-48	12400	22x8.25B	22x8.25DB
Mack B Q 6 wheel	*21500	9350	Own	L	6	4⅜x5¾	610.6	54.1	128@2300	G	Own	Own	Spic	Ross	Str	P	NE	Own	4	Own	2R	Opt	O6IV	902	176-52	15600	22x9.75B	22x9.75DB
Mack A K-6 6 wheel	*33600	9000	Own	L	6	4⅜x5¾	610.6	54.1	128@2300	G	Own	Own	Spic	Ross	Str	P	NE	Own	4	Own	2R	Opt	O6IV	1044	152-52	15600	22x9.75B	22x9.75DB
Mack A C-6 6 wheel	*35700	8500	Own	L	6	4⅜x5¾	610.6	54.1	128@2300	G	Own	Own	Spic	Ross	Str	P	NE	Own	4	Own	Ch	Opt	O6IV	930	145-52	14600	40x8P	40x8DP
Mack A P 6 wheel	*35700	10500	Own	L	6	5 x6	706.5	60.0	138@1900	G	Own	Own	Spic	Ross	Str	Gra	NE	Own	4	Own	Ch	Opt	O6IV	930	145-52	14600	40x8P	40x8DP
Mack A P 6 wheel	*33600	11000	Own	L	6	5 x6	706.5	60.0	138@1900	G	Own	Own	Cle	Ross	Str	Gra	NE	Own	4	Own	2R	Opt	O6IV	1044	152-52	15950	22x9.75B	22x9.75DB
Pierce-Arrow 13S 385	2-2½	2500	Own	L	8	3½x5	385.0	39.2	125@2800	C	Long	Long	Cle	Han	Str	P	Dif	Cla	4	Tim	Sp	33.5	B4IM-T	399	169	6000	20x8.25B	20x8.25DB
Pierce-Arrow 15T 298	3-3½	1950	Her	L	6	3¾x4½	298.0	33.7	70@2600	G	Long	Long	Cle	Han	Zen	P	DR	Cla	4	Tim	So	40.0	B4IM	399	150	5725	20x8.25B	20x8.25DB
Pierce-Arrow 17T 361	3-4	2350	Her	L	6	4⅛x4½	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Sp	34.4	B4IM	399	150	5860	20x8.25B	20x9.00DB
Pierce-Arrow 18W 361	3½-4½	3000	Her	L	6	4⅛x4½	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	41.9	B4IA-T	473	150	6680	20x9.00B	20x9.00DB
Pierce-Arrow 19R 428	3½-4½	3600	Her	L	6	4⅜x4¾	428.0	46.0	94@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	38.6	B4IA	473	150	6860	20x9.00B	20x9.00DB
Pierce-Arrow 22R 501	4½-5½	3750	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	36.0	B4IA	473	150	7050	20x9.75B	20x9.75DB
Pierce-Arrow 24X 501	5-6	4200	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	40.2	T4IA	618	160	9250	20x10.50B	20x10.50DB
Pierce-Arrow 24M 611	5-6	5000	Her	L	6	4⅜x5¾	611.0	54.1	130@2000	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Tim	Wo	39.9	T4IA-T	618	160	10200	20x10.50B	20x10.50DB
Pierce-Arrow 28X 501	6-7	4600	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Own	Wo	53.0	T04IA	720	160	10675	24x10.50B	24x10.50DB
Pierce-Arrow 28M 611	6-7	5400	Her	L	6	4⅜x5¾	611.0	54.1	130@2000	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Own	Wo	52.5	T04IA	720	160	11600	24x10.50B	24x10.50DB
Pierce-Arrow 28Y 479	6-7	4400	Her	L	6	4⅝x4¾	479.0	51.3	104@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Own	Wo	53.0	T04IA	720	160	10675	24x10.50B	24x10.50DB
Pierce-Arrow 34K 611	7½-10	5300	Her	L	6	4⅛x4½	361.0	40.3	77@2400	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Own	Wo	42.0	T04IA	720	170	11675	24x10.50B	40x8DS
Pierce-Arrow 75M 729T	*75000	6400	Her	L	6	5¼x6	779.0	66.1	150@1800	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Own	Wo	51.9	TO4IA	720	190	12750	24x10.50B	24x10.50DB
Pierce-Arrow 27T 361T	*27000	2450	Her	L	6	4⅜x5¾	611.0	54.1	130@2000	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Sp	48.1	B4IM	399	150	5725	20x8.25	20x8.25D
Pierce-Arrow 53R 501T	*35000	3800	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	47.3	B4IA	473	150	7050	20x9.75	20x9.75D
Pierce-Arrow 45X 501T	*45000	4800	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	57.2	T4IA	618	160	9300	20x10.50	20x10.50D
¶Pierce-Arrow 34L 501S4	*34000	6600	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	40.6	T6IA	1022	200	13200	20x9.75	20x9.75D
†Pierce-Arrow 44K 779S4	*44000	7500	Her	L	6	5¼x6	779.0	66.1	150@1800	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Tim	Wo	47.2	T6IA	1022	180	14500	20x10.50	20x10.50D
†Pierce-Arrow 34K 611S4	*34000	7200	Her	L	6	4⅜x5¾	611.0	54.1	130@2000	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Tim	Wo	40.6	T6IA	1022	189	14200	20x9.75	20x9.75D
Reo 1 A	1½	625	Own	L	4	3⅛x4½	205.0	23.3	51@2500	G	Per	Long	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	5.83	4IH	246	136	2950	20x6.00	32x6
Reo 1 C	1½	665	Own	L	6	3⅛x4½	205.0	23.3	51@2500	G	Per	Long	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	5.83	4IH	246	136	3020	20x6.00	32x6
Reo 1 B	1½	795	Own	L	6	3⅛x5	230.0	23.4	68@2800	C	Own	Long	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	5.28	4IH	246	140	3100	20x6.00B	32x6
Reo 1 D	1½	835	Own	L	6	3⅛x5	230.0	23.4	68@2800	C	Own	Long	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	5.83	4IH	246	164	3200	20x6.00	32x6
Reo 2 B	2	1095	Own	L	6	3⅜x5	268.0	27.3	75@2800	C	Own	Long	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	5.83	4IH	289	142	3865	20x6.50	20x6.50D
Reo 2 D	2	1135	Own	L	6	3⅜x5	268.0	27.3	75@2800	C	Own	Long	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	5.83	4IH	289	166	4015	20x6.50	20x6.50D
Reo 2 H	†2	1625	Own	L	6	3⅜x5	268.0	27.3	75@2800	C	McC	Br-L	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	6.6	4IH	289	142	4435	20x7.00	20x7.00D
Reo 2 J	†2	1695	Own	L	6	3⅜x5	268.0	27.3	75@2800	C	McC	Br-L	Cle	Ross	Zen	P	DR	Own	4	Own	Sp	6.6	4IH	289	166	4650	20x7.00	20x7.00D
Reo 2 K	†2	1765	Own	L	6		268.0	27.3	75@2800	C	McC	Br-L	Cle	Ross

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number of angles, it might be well to consider some of the outstanding advantages and disadvantages of self-maintenance. In the first place, in a self-maintenance shop the work is constantly under the direct supervision of the person responsible for the maintenance of the fleet. Secondly, it is not necessary to carry more than a limited supply of spare units, repair parts, accessories, materials and supplies, as they may be procured direct from the service station as occasion may require. Thirdly, self-maintenance repairs might not necessarily be quite so thorough and the vehicle still be perfectly safe to operate, while service station repairs are generally more extensive. For instance, an operator making his own repairs might make use of slightly worn parts, which would render his vehicle entirely safe and in fit condition to operate for considerably more mileage. The service station in most instances, as a matter of policy, would replace a slightly worn part with a new part, even though the worn part might still be good for many more miles of use.

"In considering some of the disadvantages of self-maintenance, I call attention to a situation which may occur from time to time when the self-maintained repair shop becomes overburdened. The shop may be working to the limit on jobs already in when, by reason of accident or mechanical failure, a surplus of work may suddenly come in unexpectedly. This condition might require that one or more jobs wait a day or even longer before work could be started on them, which means that the vehicle would be out of service just that much longer. If they were sent to the service station, arrangements might be made to have such work given precedence over the work considered less important, thereby lessening the time out of service.

"Opinions differ widely upon the subject of maintenance. One large operator who formerly maintained a well-equipped central repair station now farms out all major repairs to service stations. This fleet was scattered over a considerable area, which necessitated many miles of travel to and from the repair station, which represented time consumed by travel, as well as time out of service, both of which items are worthy of consideration. Some of the savings claimed to have been realized by this change of policy may have been brought about by retiring vehicles on a time or mileage basis before they have completed new vehicles.

"I have in mind a certain make of trucks which have been retired on a

(Continued on Page 16)

CRUDE OIL PRODUCTION

New York, April 14.—The American Petroleum Institute estimates that the daily average gross crude oil production for the week ended April 8, 1933, was 2,221,350 barrels. Daily production for the four weeks ended April 8 averaged 2,209,300 barrels.

Imports of petroleum at principal United States ports (crude and refined oils) for the week ended April 8 totaled 799,000 barrels, a daily average of 114,143 barrels, compared with a daily average of 216,857 barrels for the week ended April 1 and 154,929 barrels daily for the four weeks ended April 8.

Major Specifications and Mechanical Details of 1933 Commercial Cars

LEADING MAKES NATIONALLY DISTRIBUTED

(Continued from Page 13)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brake Lining	Standard Wheelbase	Chassis Wgt.	Tire Sizes Standard Front	Tire Sizes Standard Rear
Stewart 29 X S	2	1595	Lyc	L	6	3⅜x4½	298.0	33.7	85@2750	G	Fed	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	44.1	B4IM	307	145	5194	30x7.00	30x7.00D
Stewart 32 X	2½	1930	Lyc	L	6	3⅜x4½	298.0	33.7	85@2750	G	Fed	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	46.1	B4IM	348	165	5460	20x7.00	20x7.00D
Stewart 38-8	2½	2390	Lyc	L	8	3⅜x4½	322.0	36.5	100@2800	G	Fed	Ful	Spic	Ross	Str	P	DR	Br-L	5	Cla	Sp	46.1	B4IM	348	170	6170	20x7.50	20x7.50DB
*Stewart 18 X	3	2600	Lyc	L	6	3⅞x5	310.0	36.0	90@2750	G	Fed	Ful	Spic	Ross	Str	P	DR	Br-L	5	Tim	Wo	48.1	B4IM	452	165	6660	20x7.50	20x7.50D
Stewart 48-8	3	2390	Lyc	L	8	3⅜x4½	420.0	45.0	130@2800	G	Fed	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Cla	Sp	46.1	B4IMV	348	179	6950	20x8.25B	20x8.25DB
Stewart 19 X	3½	3690	Lyc	L	6	3⅞x5	354.0	36.2	90@2750	G	Fed	Ful	Spic	Ross	Str	P	DR	Ful	12	Tim	Wo	105.1	B4IM	452	165	7474	20x9.00	20x9.00D
Stewart 38-8	3½	3930	Lyc	L	8	3⅜x4½	462.0	45.0	150@2800	G	Fed	Br-L	Spic	Ross	Str	P	DR	Br-L	12	Tim	2R	105.1	B4IMV	452	170	7964	20x9.00	20x9.00D
Stewart 38-6	3½	3990	Wak	L	6	4⅜x5½	420.0	45.9	100@2000	G	Fed	Borg	Spic	Ross	Str	P	DR	Br-L	12	Tim	2R	105.1	B4IMV	452	170	7954	20x9.00	20x9.00D
Stewart 31 X	5	5190	Wak	L	6	4⅜x5½	516.0	51.2	110@2000	G	Mod	Br-L	Spic	Ross	Str	P	DR	Br-L	12	Tim	Wo	105.1	B4IMV	564	165	9335	20x9.75	20x9.75D
Stewart 27 X S	7	6120	Wak	L	6	4⅜x5½	516.0	51.2	110@2000	G	Mod	Br-L	Spic	Ross	Str	P	DR	Br-L	12	Tim	Wo	105.1	W4I	759	165	10762	24x10.50	24x10.50D
Studebaker S 2	1½-2	670	*Own	L	6	3¼x4⅝	230.2	25.4	56@3200	—	McC	Long	Spic	Ross	Str	P	DR	WG	4	Cla	Sp	36.2	B4IM	231	130	3166	20x6.00	32x6
Studebaker S 4	1¾-2½	785	Own	L	6	3¼x4⅝	230.2	25.4	75@3200	—	McC	Long	Spic	Ross	Str	P	DR	WG	4	Cla	Sp	36.2	B4IMV	231	130	3437	20x6.00	20x6.50D
Studebaker S 6	3-3	945	Own	L	6	3¼x4⅝	230.2	25.4	75@3200	—	McC	Long	Cle	Ross	Str	P	DR	WG	4	Tim	Sp	43.5	B4IMV	284	141	3982	20x6.50	20x6.50D
Studebaker S 8	3-4	1150	Own	L	6	3¼x4⅝	230.2	25.4	75@3200	—	McC	Long	Mec	Ross	Str	P	DR	WG	8	Tim	Sp	73.8	B4IMV	420	141	4928	20x6.50	32x6D
White 161 L	*8000	1760	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	Own	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4420	20x7.50B	20x7.50DB
White 601 L	*8000	1850	Own	L	6	3½x4½	260.0	29.4	54@2100	C	Own	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4210	20x7.50B	20x7.50B
White 60 K	*8500	1850	Own	L	6	3½x4½	260.0	29.4	50@1600	C	Own	Own	Mec	Han	Zen	Vac	DR	Own	3	Own	Sp	17.6	L4IH	276	112	3905	20x7.00B	20x7.00B
White 161	*9000	1700	Own	L	4	4 x5¾	289.0	25.6	56@1800	G	Own	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4290	20x9.50B	20x7.50B
White 601	*9000	1850	Own	L	6	3½x4½	260.0	29.4	54@2100	C	Own	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4UI	276	138	4090	20x7.50B	20x7.50B
White 162 L	*9000	1900	Own	L	4	4 x5¾	289.0	25.6	56@1800	G	Own	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4710	20x7.00B	20x7.00DB
White 602 L	*9000	2050	Own	L	6	3½x4½	260.0	29.4	54@2100	C	Own	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4590	20x7.00B	20x7.00DB
White 602	10000	2050	Own	L	6	3½x4½	260.0	29.4	54@2100	C	Own	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4050	20x7.00B	20x7.00DB
White 162	*10000	1900	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	Own	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4260	20x7.00B	20x7.00B
White 211 L	*10500	2300	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	133	5170	20x7.00B	20x7.00DB
White 611 L	*10500	2450	Own	L	6	3¾x4½	299.0	33.7	70@2100	G	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	131	4960	20x7.00B	20x7.00DB
White 611	*11500	2450	Own	L	6	3¾x4½	299.0	33.7	66@2100	G	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	4960	20x7.00B	20x7.00DB
White 211	*11500	2300	Own	L	4	4 x5¾	289.0	25.6	45@1800	C	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5110	20x7.00B	20x7.00DB
White 212 L	*12000	2650	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	133	5500	20x7.50B	20x7.50DB
White 612 L	*12000	2800	Own	L	6	3¾x4½	299.0	33.7	70@2100	G	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IHV	349	131	5295	20x7.50B	20x7.50DB
White 212	*13000	2650	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5230	20x7.50B	20x7.50DB
White 612	*13000	2800	Own	L	6	3¾x4½	299.0	33.7	66@2100	C	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5295	20x7.50B	20x7.50DB
White 611 A	*14000	450	Own	L	6	3¾x4½	299.0	33.7	77@2400	C	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	26.4	L4IH	349	148	4960	20x9.00B	20x7.00DB
White 612 A	*14000	2800	Own	L	6	3¾x4½	299.0	33.7	70@2100	C	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IHV	349	148	5295	34x7.00P	34x7.00DP
White 620	*15000	1550	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.8	OL4IHV	414	157	7430	20x8.25B	20x8.25DB
White 618 L	*16000	3600	Own	L	6	3¾x4½	299.0	33.7	77@2400	C	Own	Own	Spic	Ross	Zen	Vac	DR	Own	5	Own	2R	57.2	L4IHV	349	153	6775	34x7.00P	34x7.00DP
White 51 A	*17000	3750	Own	L	4	4½x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	35.6	O2IM	335	170	6438	36x5.00P	36x8.00S
White 630 L	*17000	5000	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	37.3	L4IHV	553	157	8500	20x9.00B	20x9.00DB
White 618-618A ..	*18000	3600	Own	L	6	3¾x4½	299.0	33.7	77@2400	C	Own	Own	Spic	Ross	Zen	Vac	DR	Own	5	Own	2R	57.2	L4IHV	349	166	6775	20x9.00B	20x9.00DB
White 621	*18000	4650	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	OL4IHV	484	157	7945	20x9.00B	20x9.00DB
White 630	*20000	6100	Own	H	6	4⅜x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	Sp	33.9	O41A	553	180	9200	20x9.00B	20x9.00DB
White 630	*20000	5000	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	O41HV	553	168	8500	20x9.00B	20x9.00DB
White 38	*22000	4400	Own	L	4	4½x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	49.7	OPXM	224	180	7797	36x5	36x6SD
White 630 A	*22000	5000	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	O41HV	553	168	6500	20x9.00B	20x9.00DB
White 611	*24000	6450	Own	H	6	4⅜x5¾	519.0	45.9	119@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	46.9	O41A	633	180	9700	20x9.75B	20x9.75DB
*White 630 SW200	*24000	6245	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Tim	Wo	44.2	OTIHV	677	193	10000	20x8.25B	20x8.25DB
White 631	*24000	5750	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	2R	58.9	O41HV	633	168	9000	20x9.25B	20x9.25DB
White 642	*28000	6750	Own	H	6	4⅜x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	Vac	L-N	Own	4	Own	2R	66.5	O41A	633	180	10600	24x9.75B	24x9.75DB
White 38 SS	*36000	5300	Own	L	4	4½x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	77.6	OPXM	224	196	9300	24x10.50B	24x10.50DB
White 643	*32000	6950	Own	H	6	4⅜x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.5	O41A	633	180	10900	24x10.50B	24x10.50DB
White 691	*32000	7250	Own	H	6	4⅝x5¾	580.0	51.3	127@2050	C	Own	Own	Spic	Ross	Zen	P	DR	Own	5	Own	2R	63.0	O41A	623	129½	12200	24x10.50B	24x10.50DB
*White 642 SW320	*34000	8025	Own	H	6	4⅜x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	55.6	OTIA	833	198	12670	20x9.00B	20x9.00DB
*White 643 SW420	*40000	8550	Own	H	6	4⅜x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	69.1	OTIA	833	198	14400	40x8	40x8D
Willys 77	——	——	——	L	4	3½x4¾	134.2	15.6	48@3200	C	Fed	Own	Own	Sag	Til	P	Aut	Own	3	Sp	4.3	B4IM	134	—	——	17x5.00B	17x5.00B

GENERAL NOTATIONS

***†REFERENCE MARKS** apply to individual lines only and explanations are given under the subdivision for each company in the "SPECIAL NOTATIONS."

CAPACITIES given in this table are in tons or fractions of tons. *Shows maximum allowable gross weight in pounds.

ENGINE—Bud, Buda; Con, Continental; Cum-D, Cummings-Diesel; Her, Hercules; Lyc, Lycoming; Pont, Pontiac; Wak, Waukesha; Wis, Wisconsin; Hall, American Car & Foundry; Ster, Sterling Engine Co.

VALVE ARRANGEMENT—L, "L" head; H, in head; O, overhead; S, sleeve.

TYPE OF CAMSHAFT DRIVE—G, gear; C, chain.

RADIATOR MAKE—G&O, G. & O. Mfg. Co.; Per, Perfex Corp; Long, Long Mfg. Co.; Har, Harrison Radiator Corp.; Fed, Fedders Mfg. Co.; McC, McCord Radiator & Mfg. Co.; Mod, Modine Mfg. Co.; Hex, Hexcel Radiator Co.; Yo, Young.

CLUTCH MAKE—Jon, Jones Clutch & Gear Co.; Ful, Fuller & Sons Mfg. Co.; Borg, Borg & Beck Co.; Br-L, Brown-Lipe Gear Co.; Rock, Rockford Drill & Machine Co.; Cov, Covert Gear Co.; Long, Long Mfg. Co.; Detr, Detroit Gear & Machine Co.; Mer, Merchant & Evans; Hel, Merchant & Evans.

UNIVERSALS MAKE—Spic, Spicer Mfg. Co.; Blo, Blood Bros. Machine Co.; Sup, Superior Universal Products; Un, Universal Products Co.; Cle, Cleveland Steel Products Corp.; Pet, Peters; Opt, optional; Mec, Mechanics Machine Co.

STEERING GEAR MAKE—Ross, Ross Gear & Tool Co.; Han, Hannum Mfg. Co.; Sag, Saginaw Steering Gear Co.; Gem, Gemmer Mfg. Co.; Col, Columbus Gear & Pump Co.; W-G, Warner Gear Corp.

CARBURETOR—B&B, Ball & Ball; Car, Carter; Mar, Marvel; Sch, Wheeler-Schebler; Str, Stromberg; DL, Detroit Lubricator; Til, Tillotson; Zen, Zenith-Detroit.

FUEL FEED—Gra, gravity; Vac, vacuum tank; P, fuel pump.

ELECTRICAL SYSTEM — AB, American-Bosch; Aut, Electric Auto-Lite; Eis, Eisemann; L-N, Leece-Neville; NE, North East; RB, Robert Bosch; DR, Delco-Remy.

TRANSMISSION—Br-L, Brown-Lipe; Cov, Covert; Ful, Fuller; Mec, Mechanics Machine; Mun, Muncie; W-K, Warner Gear; Cot, Cotta Gear Co.; Cla, Clark Equipment Co.

REAR AXLE—Cla, Clark Equipment; Col, Columbia; Eat, Eaton; Pont, Pontiac; Sal, Salisbury; Tim, Timken; Wis, Wisconsin.

FINAL DRIVE—IG, internal gear; St, straight bevel; Sp, spiral bevel; Wo, worm; 2R, double reduction; Ch, chain; S-T, semi transverse.

TYPE OF SERVICE BRAKES—B4IM, Bendix, 4 wheel internal mechanical; B4MV, Bendix, 4 wheel, mechanical, vacuum; B6IA, Bendix, 6 wheel, internal air; B4IMV, Bendix, 4 wheel internal mechanical, vacuum; BO4IMV, Bendix, own, 4 wheel, internal, mechanical, vacuum; BrIA, Bendix, operating on 4 rear wheels, internal air; BW4IM, Bendix front, Wisconsin rear, 4 wheel, internal, mechanical; BE4IM, Bendix front, Eaton rear, 4 wheel, internal, mechanical; B4IH, Bendix 4 wheel, internal, hydraulic.

CB4IM, Columbia, Bendix, 4 wheel internal, mechanical; C4IM, Columbia, 4 wheel, internal, mechanical; K2IM, Clark, 2 wheel, internal, mechanical; CR4IA, Christensen-Relay, 4 wheel internal, air.

L4IHVA, Lockheed, 4 wheel internal hydraulic, vacuum, air; LO4ID, Lockheed, own, 4 wheel, internal, drive shaft; LO4IV, Lockheed, own, 4 wheel, internal, vacuum; LT4DV, Lockheed, Timken, 4 wheel, drive shaft, vacuum; L4IH, Lockheed, 4 wheel, internal, hydraulic; L4IHA, Lockheed 4 wheel, internal, hydraulic, air; L4IHV, Lockhead, 4 wheel, internal, hydraulic, vacuum; LT4IHV, Lockheed, Timken, 4 wheel, internal, hydraulic, vacuum; LT4IVA, Lockheed, Timken, 4 wheel, internal, vacuum, air; L6IHV, Lockheed, 6 heel, internal, hydraulic, vacuum; L6IH, Lockheed, 6 wheel, internal, hydraulic.

O2IM, Own, 2 wheel, internal, mechanical; O2IV, Own, 2 wheel, internal, vacuum; O4IA, Own, 4 wheel, internal, air; O4IH, Own, 4 wheel, internal, hydraulic; O4IHV, Own, 4 wheel internal, hydraulic, vacuum; O4IM, Own, 4 wheel, internal, mechanical; O4IV, Own, 4 wheel, internal, vacuum; O4M, Own, 4 wheel, mechanical; O2XM, Own, 2 wheel, external, mechanical; O4XM, Own, 4 wheel, external, mechanical; O6IA, Own, 6 wheel, internal, air; OJXM, Own, jack shaft, external, mechanical; OL4IHV, Own, Lockheed, 4 wheel, internal, hydraulic, vacuum; OPX, Own, propeller shaft, external; OPXM, Own, propeller shaft, external, mechanical; OPM, Own, propeller shaft, mechanical; ORIV, Own, rear wheels, internal vacuum; OTIHV, Own Timken, internal, hydraulic, vacuum.

S4IM, Steeldraulic, 4 wheel, internal, mechanical.

T4rIA, Timken, operating on 4 rear wheels, internal, air; T4IA, Timken, 4 wheel, internal, air; T6IA, Timken, 6 wheel, internal, air; T2IMV, Timken, 2 wheel, internal, mechanical, vacuum.

VB—Vacuum Booster.

W4I, Westinghouse, 4 wheel, internal; W4IA, Westinghouse, 4 wheel, internal, air; W6IA, Westinghouse, 6 wheel, internal, air; 4IA, 4 wheel, internal, air; 4IH, 4 wheel, internal, hydraulic; 4M, 4 wheel mechanical.

T, True-stop. *Models on which Trustop is optional.

WHEEL BASES given are standard, but optional wheel bases are available in many cases.

***CHASSIS WEIGHT** according to Automotive Daily News formula, which is the chassis with gas, oil, water and spare tire, but without cab or other equipment.

TIRES—B, balloon; D, dual; S, solid; P, pneumatic.

SPECIAL NOTATIONS

AUTOCAR

*For tractor use only.
**Six wheeler driving from 4 rear wheels.
***Engines in these models are located under driver's seat.

BROCKWAY

*Models equipped with twin ignition.

DIAMOND T

*Six-wheelers.
Additional standard wheel base available as follows:

510	158	750	167, 192
504A	156½	201	180½, 199½
506A	174	1201	174½, 180
603	157, 179	1602	174½, 180
606B	177½	1603	184

DODGE

*Models F40, F41, F61 and F62 can be had with double drop frame.
†Six-wheelers.

FEDERAL

†Six-wheelers.
*Also rated in pounds at total allowable weight as follows:

D 3	8,500	A 600 S W	20,000
E 3	8,500	A 600 D	20,000
F 7	10,000	U S	21,000
F 8	11,580	U 6 D R	21,000
A 6	13,500	A 6 S W	18,500
A 6 T	15,000	C 7	24,000
A 6 T W	15,000	C 7 W	24,000
T 3 W	14,000	C 8	24,000
T 8 W F	15,000	C 8 W	24,000
D 2 S W	12,500	X 8	30,000
E 2 S W	12,500	X 8 D R	30,000
D 2 D	12,500	X 8 R	30,000
2 E D	12,500	X 8 R D R	30,000
A 600	15,000	A 600	15,000
A 600 T	17,000	A 600 T	17,000
A 600 T W	17,000	A 600 T W	17,000
A 600 T D R	17,000	A 600 T D R	17,000
T 10 B	18,000	A 600 S W	20,000
T 10 W	18,000	A 600 D	20,000
T 10 D R	18,000	T 3 W F A	16,000

†Both the four and six cylinder are also offered in 157-inch wheel base at $1,145 and $1,345, respectively.
Model T 10 SW also available in 206 and 224 inch wheel bases.

GENERAL MOTORS TRUCK

*Capacity indicated is the Straight Rating (combined weight of chassis body, equipment and pay load) for which each chassis is designed and guaranteed to satisfactorily operate under average conditions. The size of the tires used does not affect this Straight Rating, but to secure maximum tire mileage it is suggested that the total gross weight be limited to a "recommended gross weight" for each tire equipment based on tire capacity. Prices cover base chassis and vary with wheel base and tire combinations. The number of wheel base lengths, tire types, range of "recommended gross weights" and ton range for each model follows:

Note: Models T-15 to T-61, inclusive, are available for export only as coach chassis.

Model	Wheel Bases	Tire Types	Range of "Rec. Gross Weights"	Ton Range
T-15	3	10	4500- 6500	½-1½
T-18 (200)	2	..	7500- 8200	1½-2
T-18 (221)	2	..	7500- 8500	1½-2
T-19	4	..	7500-10000	1½-2½
T-23 (200)	3	..	8500-10000	2-3
T-23 (221)	3	..	8500-10500	2-3
T-25	3	17	6800- 9000	1½-2
T-26	4	..	9000-11000	2-3
T-30	3	15	10000-12500	2-3
T-31	4	..	11000-14000	2½-4
T-32	4	..	11000-13000	3-3½
T-42	4	12	12000-15000	2½-4
T-43	4	..	12500-16000	3½-4½
T-44	4	12	12000-16000	3-4½
T-45	4	..	13500-16000	3-4½
T-51	4	..	16500-19000	4-5½
T-51H	4	..	16500-22000	5-6½
T-60	4	16	18500-22000	5-6½
T-61	4	..	16500-22000	5-6½
T-82	4	12	19000-24000	5-7
T-83	4	..	20000-25000	5-7½
T-85	3	..	25000-30000	6-8
T-85H	4	..	25000-34000	8-9½
T-90	3	..	22000-28000	5-7½
T-95	2	..	30000-40000	9-11
T-110	3	..	32000-40000	10-12
T-130	3	..	42500-58000	12-15

Optional rear axle gear ratios available for all models. Double reduction axles available for Models T-43, T-45, T-51, T-60, T-61, T-82, T-83 and T-95.

GRAMM

Series	Straight Rating	Wheel Base	Pay Load Range
AX 4	8,000	157	1 to 1½ tons
AX 6	8,000	157	1 to 1½ tons
BX 4	10,000	157	1½ to 2 tons
BX 6	10,000	157	1½ to 2 tons
CX 4	12,000	157-180	2 to 3 tons
CX 6	12,000	157-180	2 to 3 tons
B	12,000	157-174	1¾ to 2½ tons
CXH	13,400	157-180	2 to 3 tons
C	14,000	145-196	2 to 3 tons
EX	16,300	145-210	3 to 4 tons
D	17,000	145-196	2½ to 4 tons
E	20,000	145-234	3 to 4½ tons
ED	20,000	145-310	3 to 4½ tons
EY	.....	.....	3 to 4 tons
G	24,000	165-235	4 to 6 tons
G S	24,000	165-235	4 to 6 tons
GY	.....	.....	4 to 5 tons
GW	28,000	157-240	5 to 7½ tons
GWD	30,000	157-240	5 to 7½ tons
HY	.....	.....	5 to 6½ tons

†Both the four and six-cylinder are also offered in 157-inch wheel base at $1,145 and $1,345, respectively.

Larger engines and corresponding transmissions, clutches, propeller shaft, axles, etc., are provided on all models of Gramm trucks at extra cost when type of service requires them. Wheel bases, cab to rear of frame, and cab to center line of axle designations may change to suit the special requirements.

Wisconsin double reduction axles are available in all series, except AX and BX.

Gross vehicle weight indicated for each model in the table is the straight rating (combined weight of chassis, body, equipment and payload) for which the chassis is designed and guaranteed to satisfactorily operate under average conditions. Tire sizes should be selected within the tire manufacturers' rating to carry the gross load desired, which must not exceed the straight rating.

INDIANA

*Six-wheelers.

INTERNATIONAL

Brake H. P. values given for International motor trucks are net values obtained with all standard equipment accessories running.

LA FRANCE

†Six wheelers. * These models also available equipped with Diesel engines.

MACK

*Mack capacities are given in Gross Load, which is neither pay load, gross weight nor total tire capacity. Gross Load is the maximum distributed weight of pay load, body and equipment which can be carried without exceeding the Tire and Rim Association rating of the largest capacity tires authorized for each model.

PIERCE-ARROW

*Optional final drive on models except "8" and "T" series.
†Six-wheelers.

REO

Model 2 D can be secured in 166-inch wheel base at $1,095.
†Heavy duty.

ROCKNE

†Price includes panel body.

STERLING

†Six wheelers. *These models also available equipped with Diesel engines.

STEWART

Model 41X also supplied 134-inch wheel base.
Models 42X and 43X also supplied in 145, 160, 176-inch wheel base.
Model 29XS can be supplied in 135, 160, 176 and 190-inch wheel base.
*Models 18X and 32X can be supplied in 148, 190 and 220-inch wheel base.
*Models 19X, 31X and 27XS can be supplied in 148, 172, 190, 220 and 235-inch wheel base.
As optional equipment, Models 18X, 19X, 31X and 27XS can be supplied with Timken dual reduction rear axle.
Models 38-8, 38-6, 48-8 and 58-8 can be supplied in 160, 170, 180, 196, 226 and 241-inch wheel base and worm axle.

WHITE

Six-wheelers.

Who's Selling the Industry's Output?

Average Sales Last 12 Months
Per Automotive Daily News Subscriber

314 New Cars

426 Used Cars

$55,476 Worth of Service Work

$56,400 Worth of Parts, Accessories, Etc.

These average figures are taken from replies to a letter to a group of car merchants taken at random from our circulation cards. You are at liberty to come to our office and select from our subscription cards any similar group to whom we will send the same questionnaire.

About 25% of the dealers and distributors of the country are doing nearly all the business. There are tens of thousands of cats and dogs, garages and service stations that have a car shingle outside, but the actual sales are made by the business men, such as those who read Automotive Daily News. They each average more parts and service sales than a dozen small shops.

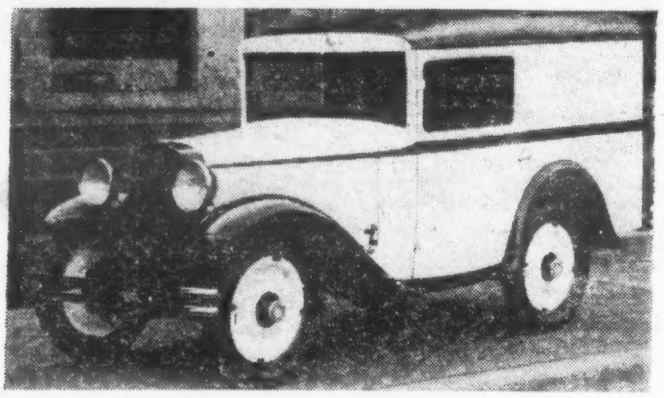
These figures are far above national averages as you might have guessed from the subscription price—$12 a year, a figure which obviously attracts the highest type of executive in all branches of the industry, executives who have purchasing *authority* together with purchasing *power*.

This is not the entire market reached by Automotive Daily News. Add to the wholesalers and retailers the purchases of practically all important factories and you get the bulk of the automotive industry's purchases through one medium.

Automotive Daily News

H. A. TARANTOUS, *Bus. Mgr.*, 350 HUDSON ST., NEW YORK
WESTERN OFFICE: Willard R. Cotton, *Mgr.*, 333 No. Michigan Ave., Chicago, Ill.
DETROIT OFFICE: Geo. M. Slocum, *Mgr.*, Fisher Building, Detroit, Mich.

Austin Commercial Unit for Brewing Industry



The American Austin Company, Butler, Pa., feels that it has a place in the brewing field for its light commercial car with capacities not over 500 pounds and its passenger car units, which in addition to their economy as salesmen's fleet offer unique advertising value.

In the commercial car field Austin feels that it should fill a real need as a high speed emergency delivery job which can be operated economically. For this purpose it could be used for making small deliveries quickly when either a heavier truck is not available or its use would delay the shipment. In this way a customer could be retained through prompt service and the economy of operation of the Austin commercial car would not make such courtesy service a burden on the brewer or distributor providing it. Prices on the Austin commercial units range from $316 to $376.

TRAILER CO. HAS MADE A CAREFUL STUDY OF NEEDS OF BREWERS

The Trailer Company of America, successor to the Trailmobile Company and Lapeer Trailer Corporation, Cincinnati, O., has made a careful study of the possible needs of the brewing industry, with the result that it had early booked substantial orders from brewers.

Among the orders already booked are fifteen trailers for the Prima Pabst Corporation, Milwaukee. Two trailers to the Koetter Cooperage Company, St. Louis, Mo., and twelve to Val Blatz, Milwaukee.

One of the popular types is that equipped with the body built by the Highland Body and Manufacturing Company, Elmwood, Cincinnati. This body is a combination case and keg type, mounted on the Lapeer Trailmobile drop frame trailer. This body has accommodations for carrying kegs in the forward section over the fifth wheel, with the rear half designed for carrying cases.

The total length of the trailer body is 16 feet, the width 6 feet 10 inches, and the height from the loading platform 4 feet 8 inches. The loading platform in the rear is 36 inches above the ground level. The keg compartment extends 6 feet 2 inches back from the front of the body and the remainder of the body provides space for 104 cases.

JOHNS-MANVILLE

New York, April 14.—Johns-Manville and subsidiaries report for the first quarter net loss of $953,799, or $1.45 a share, compared with net loss of $912,607, or $1.39 a share, in the corresponding quarter of last year. Sales amounted to $3,307,805, against $4,604,191. Loss before depreciation, depletion and taxes was $508,693, compared with loss of $442,802 in the same quarter last year.

SPECIALIZED TRUCKS ARE BREWERS' NEED, SAYS BROCKWAY CO.

By G. D. SHIRA,
Brockway Motor Company, Inc.

Brockway trucks offer the modern brewer the efficiency and economy so necessary in the distribution of beer, if profits are to be made in face of high taxes and the keenest competition.

All brewers have similar manufacturing and production problems, but possibly no two brewers have the same problems of distribution and transportation. Efficient, economical transportation equipment will provide the profit margin which no brewer can afford to overlook.

Today's transportation methods involve many factors that did not even exist before prohibition. Congested traffic, wider and better roads, higher speeds, frequent traffic lights, reduced parking areas—these are a few of the new conditions that have so revolutionized the design, weight, power and speed of modern delivery trucks.

Consideration, of course, must be given to the effect the law has on the transportation of beer and the methods of distribution that will be allowed. State laws controlling size, weight and type of equipment that may be used are also important factors.

To properly meet all of these problems, Brockway offers the most complete line of specialized truck units to cover every phase of transportation requirements in the present day. Our complete body manufacturing facilities enable us to construct any type of special bodies to fit exact requirements.

HUPP COUPE FOR BREWERS' SALESMEN

The Hupp commercial coupe is particularly well adapted to the needs of the traveling representatives of the brewing companies, according to a study which has just been completed by Rufus S. Cole, vice-persident in charge of sales of the Hupp Motor Car Corporation.

The chief requirements of this service, he states, are speed, reliability and adequate carrying capacity for samples, window displays and other merchandising equipment which were the very qualifications in the minds of the engineers in designing the Model 316 coupe without rumble seat.

"For the next few months there is going to be a tremendous amount of activity on the part of the sales organizations connected with the brewing industry," states Mr. Cole. "The requirements of the salesmen and others connected with the merchandising of the product are such that they must be provided with quick, convenient transportation, and at the same time there should be sufficient carrying capacity to handle a considerable amount of bulky articles, or even a few cases of beverage, if necessary. Our Series 316 coupe wil take ten cases in the rear compartment."

Truck Fleet Maintenance Methods Contrasted

(Continued from Page 14)

time basis of six years and had covered only from 29,000 to 40,000 miles. This practice is extremely difficult to understand, when we consider another large operator who operates ninety-six trucks of the same make, forty-nine of them over a period of eleven years, covering a total of 6,753,670 miles, or an average of 137,830 miles per truck, twenty-five of them averaging 118,807 miles per truck, eight averaging 128,209 miles per truck, twelve averaging 167,074 miles per truck, two averaging 153,895 miles per truck, and two of them over a period of sixteen years averaging 222,876 miles per truck.

"All of these trucks are still in operation; they have always been and are still self maintained. This fleet of trucks is kept in 'spick and span' condition at all times, and it is claimed by the operator that they are still satisfactory and economically maintained. This operator was asked how much longer he expected these trucks to operate economically and he replied, 'as long as I am able to get parts to repair them.'

"In summing up the situation, it seems that the vital factor affecting the successful and economical operation of an automobile repair station is the careful selection of the personnel. If an operator has a sufficient number of vehicles so centralized as to justify the establishment of a self-maintained repair shop and if he employs a supervisory force equal to that of the manufacturers' service station, there can be very little doubt that self maintenance is more desirable than service station maintenance. If, on the other hand, an operator has not a sufficient number of vehicles so centralized, or in other words, if a greater portion of his fleet is operating from several separate and remote districts which would necessitate many miles of travel to and from a central repair station and an unreasonable period of time out of service it seems reasonable to consider service station maintenance."

Combined in the

AMERICAN BOSCH Big Brute COIL

especially for buses and trucks

THE ignition system of a bus or truck depends on the coil. That's more than a man-sized job! So we developed a coil of brute strength for the purpose.

Just look at the Big Brute! It is a larger, heavier coil. Designed especially for the gruelling demands of heavy trucks and buses, even under the most unfavorable operating conditions.

A Big Brute! It is built with ample reserve power that insures efficient ignition at all operating speeds, right up to the highest. This is especially important in six or eight cylinder engines on buses and trucks today, where ordinary coils often fail for lack of sufficient reserve. A high speed coil, it has ample reserve power for any requirement.

A Big Brute! With so much greater voltage that it fires a spark across the spark plug gap no matter how much the electrodes are worn or how rich the mixture. With so much greater ability to fire fouled plugs that it gives added protection against engine failures.

A Big Brute! It fires a spark at such low battery voltage that stiff engines start easier on cool snappy mornings.

The American Bosch Big Brute Coil has a housing of rugged cast iron, practically indestructible, which insures rapid heat dissipation and prevents excessive temperature stresses on the winding. In every detail it is armored against trouble, sealed against dust and moisture.

The Big Brute requires no special condenser. It weighs 5 lbs. And it is priced at only $8.00. See your American Bosch service station or . . . mail coupon below about this and other extra-efficiency American Bosch and Bosch Products.

Manufactured by

UNITED AMERICAN BOSCH CORPORATION

SPRINGFIELD, MASS. Branches: NEW YORK CHICAGO DETROIT

CANADIAN WAREHOUSE: TORONTO, CANADA

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PRODUCTS OF UNITED AMERICAN BOSCH CORPORATION

- ☐ 7 Point Coil Plan
- ☐ American Bosch Condensers
- ☐ American Bosch Condens-O-Scope
- ☐ American Bosch Magnetos
- ☐ American Bosch Motor Car Radio

PRODUCTS OF ROBERT BOSCH A. G.

- Bosch Pyro-Action Spark Plugs ☐
- Bosch Super-Energy Magnetos ☐
- Bosch Semaphores ☐
- Bosch Vibro-Balanced Horns ☐
- Bosch Volt-O-matic Generators ☐

PRODUCTS manufactured by ROBERT BOSCH A. G., bear trademark shown above. Sold by United American Bosch Corp.